ELECTRICAL WORLD

News Issue

A McGRAW-HILL PUBLICATION

William F. Little, 1950 Gold Medalist of the Illuminating Engineering Society

IEI Sees 18.6% Reserve in 1953 ... Page 4

Washington Water Power Co Appreciation School ... Page 16

Be thrifty - use the I-50

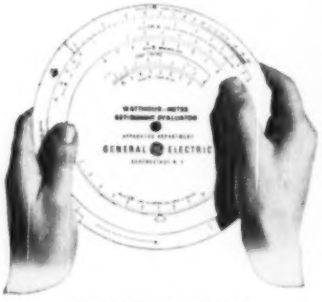
HOW MANY OF YOUR WATTHOUR METERS ARE LOSING MONEY?

1/3 of the meters in use today are obsolete!

- METERS OF PRE-1914 DESIGN SHOULD BE RETIRED AS PROMPTLY AS POSSIBLE.
- METERS OF 1914-1925 DESIGN LOSE REVENUE AT HIGH LOADS, JUSTIFY FEW OR NO REPAIRS.
- METERS OF 1926-1936 DESIGN ALSO REQUIRE APPRAISAL—DEPENDING ON LOADS MEASURED, MAINTENANCE AND REPAIRS.

Now—

with the aid of the retirement evaluator—you can determine which groups of your meters are losing money and should be retired promptly. The evaluator is based on an economic formula for meter retirement developed by General Electric engineers. You can substantially increase income and decrease expenses by properly planned retirement of obsolete meters and replacement with the I-50—today's most modern meter. Ask your G-E representative for complete information. Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



*RETIREMENT EVALUATOR

GENERAL ELECTRIC

603-37

The Electrical Week

The nation's electric power industry is rapidly increasing its capacity reserve. A survey by EEI shows that reserve this year will be at least 13% and more likely 15.6%. Regions where reserves are the least are the Southeast and Northwest (p 4) . . . The National Association of Electric Companies has made public its report to the temporary Water Resources Policy Commission. The report advocates the establishment of a sound federal water policy and advocates close cooperation among the federal government, other public agencies, and the investor-owned companies (p 6) . . . The South Amboy Plant of Jersey Central Power & Light Co is back in operation after the disastrous explosion of munition-ladened barges at a nearby pier. Pictures show the extent of the damage and the nearness of the plant to the explosion (p 12) . . . SEC has delayed action, at least temporarily, on two new requests to speed the dissolution of American Power & Light Co (p 13) . . . And expenditures for new plant and equipment are definitely on the rise. That means a better industrial market for utilities (p 30).

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Chairmen of Federal Power and Securities and Exchange Commissions hereafter will be appointed by the President rather than elected by their own members. Reorganization legislation making this change went through Congress May 24. Another approved bill provides for two additional assistant secretaries of Interior, making a total of four. FPC Chairman Mon Wallgreen and SEC Chairman Harry A. McDonald will have broad authority over the activities of those agencies under the reorganization program.

It was the last coal strike which forced Jersey Central Power & Light Co to install oil burning equipment at its South Amboy Plant. If that had not been installed, the plant would not be in operation today. Its coal must be screened for explosives buried in it by the recent explosion on nearby munition-laden barges before it can be used.

At least one industry organization believes in prayer. The Public Utilities Advertising Association always opens its conventions with a prayer led by Harold Metcalf, West Penn Power Co, a former minister.

The state rather than the federal government was favored as the control agent for the natural resources of the state by the Commonwealth Club of California in a recent survey. The club is composed of prominent business leaders. Specifically the members opposed the Central Valley project, and favored the encouragement of non-federal agencies to develop water and power projects, construction of water and power projects by the federal government if too big for state or local agencies to handle, and the turning over of such projects to state or local agencies to operate.

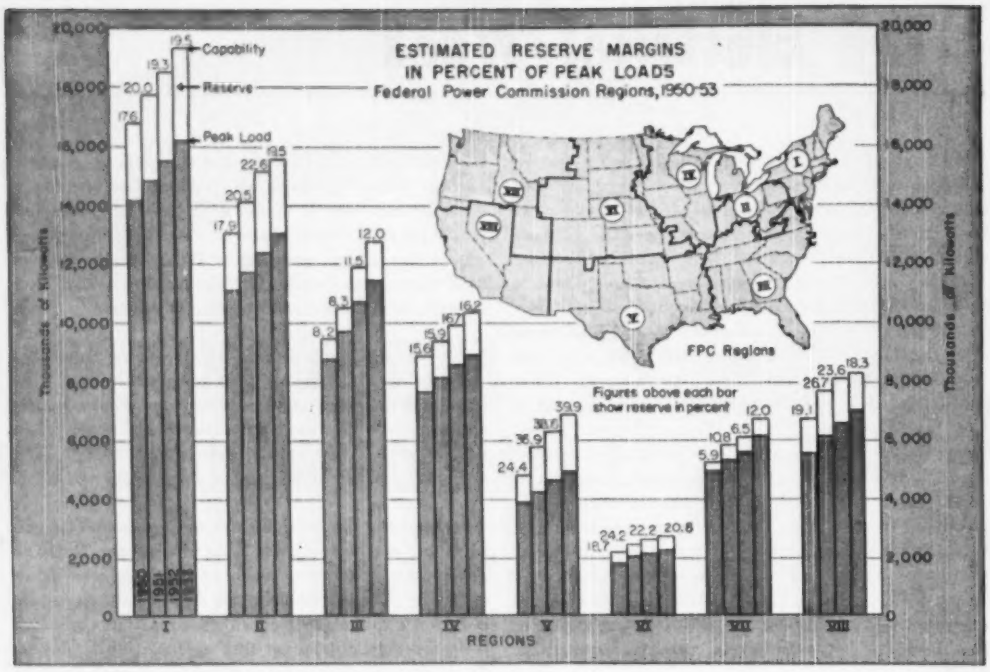
The use of electric soil heating cable in flower and truck gardens is gaining wide acceptance in the Los Angeles area, Department of Water and Power heating engineers report. Plants grow faster and better where electric cable is used; so nurserymen profit by being able to market products sooner and at a higher price.

Perhaps the National Electrical Contractors Association is "getting religion." At the recent Business Development Section meeting of the Northwest Electric Light & Power Association, H. L. Scott, chairman of NECA's Business Promotion Committee, came out flatly for free enterprise and against public power. He attributed earlier support of TVA and REA to the belief that they would extend the use of electricity and thus benefit contractors.

The mild winter in most sections of the country should get more credit than it has been getting for the current building boom.

Notes From The News

Power service was disrupted in Hazel Dell, Ill., last week when a bull got under a guywire anchoring a pole and started rubbing his back. As he kept rubbing back and forth, the conductors swayed together and short circuited . . . Bangor Hydro-Electric Co's gas turbine unit is now on test at Schenectady. It will be in service in late summer or early fall. Expected capability is 6,000 kw . . . A Puget Sound Power & Light Co line foreman has been charged with manslaughter in the death of a man who picked up a 13-kv power line which fell across the driveway of his home. It is alleged that the foreman deliberately cut the wire to insure himself of overtime work and additional pay. . . . Telephone facilities at Lowell (Mass.) Electric Light Corp's main office and power plant recently served all night as an emergency center for police communication. A city signaling cable was accidentally cut during a traffic light installation . . . Federal Power Commissioner Claude L. Draper resumed his duties May 18. Draper suffered a broken hip in a fall Feb. 22.



REGIONAL RESERVES of generating capacity appear adequate for this and the next three years, assuming average water conditions

Capacity Reserve Set at 13-15.6% in '50

EEI Survey Reveals Industry Is Ready to Carry All Predictable Loads; Only 2 FPC Regions May Have Difficulty; Reserve Margin to Keep Growing

RESERVES of generating capacity of the nation's electric utility systems will total more than 18% next year and remain at that level, or higher, through 1953. Total reserves this year will amount to 15.6% of peak loads, as compared with last year's reserve margin of 14.2%.

These estimates, based on an assumption of average water conditions for hydroelectric operations, highlighted the Edison Electric Institute's semi-annual electric power survey. The survey, which was reported last week (May 25), also showed increasing national reserves—ranging from 13% this year to 16.3% in 1952—in the event of adverse water conditions.

Tracing back to 1948 when the industry's postwar expansion program began to hit its stride, EEI found total capability increasing during the six-year period ending in 1953 by 52%. The increase in total load for the same six years is estimated at 37%. Actual capacity of the electric utility systems, both public and privately-owned, totaled 54,456 Mw in 1948 and was scheduled to rise to 67,526 Mw in 1950 and 82,913 Mv by 1953. Total peak load for the same years was estimated as 51,069 Mw in 1948, 58,409 Mw in 1950, and 69,924 Mw in 1953.

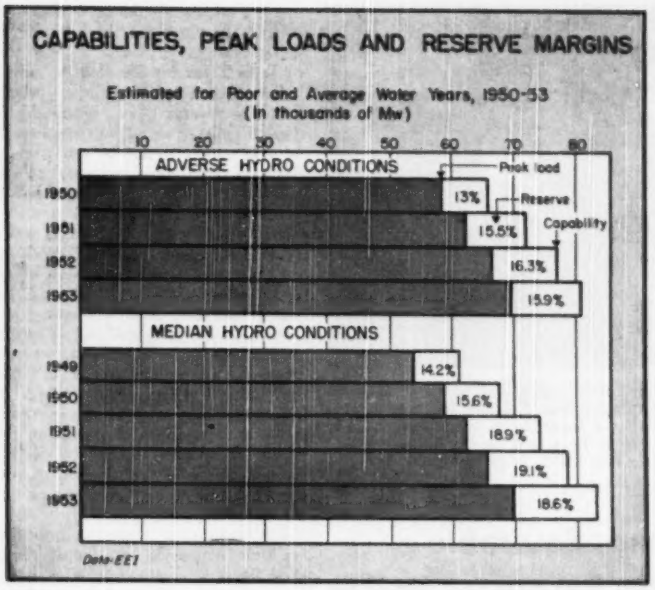
On a regional basis, EEI found reserves of more than 15% by 1951 in all except Federal Power Commission Regions III (Southeast) and VII (Pacific Northwest) under average hydro conditions. Region III, which includes the TVA system, will have reserves increasing from 8.2% in 1950 to 12.0% in 1953. Region VII, with only a slender margin in its western division, will have reserves of 5.9% in 1950 and 12.0% in 1953 under median hydro conditions.

Adverse hydro conditions would change the entire picture in both regions, EEI conceded. Region III probably could skimp by with reserves ranging from 2.8% this year to 7.9 in 1953. The survey showed lower peak loads under poor water conditions, assuming that some interruptible load would be dropped on peaks when water was low.

But adverse water conditions would result in steady deficiencies of capacity in Region VII. The eastern portion of this area would have small reserve margins, but the situation in the western section would result in deficits of 385,000 kw (7.7%) in 1950, 491,000 kw (9.2%) in 1951, and 83,000 kw (1.4%) in 1953.

EEI foresaw only slight fluctuation load factor over the next four years. On a national basis, it set load factor at 60.5% in 1950, 60.3% in 1951, 60.4% in 1952, and 60.5% in 1953, as compared with 1949's actual 60.8%.

Some confusion developed the week before EEI announced the results of its latest survey because of a similar study by the National Security Resources Board. Figures in the NSRB report, based upon a survey made last October,



NATIONAL TOTALS show increasing reserves under either poor or median water conditions

disagreed considerably with the new EEI findings and varied slightly from those developed last fall by the Institute (EW, Nov 5, p 54).

The major disparity appeared due to new estimates of construction plans included in the new EEI document and unavailable last October. The NSRB report, for example, predicted total national reserves of 17.3% by 1952. Actually, this was slightly higher than EEI's estimate of last fall (16.9%).

NSRB also appeared doubtful that this margin would be wholly adequate in the event of war, accompanied by damage to domestic generating plant or manufacturing facilities. But authoritative industry sources disagreed.

EEI's study included an investigation of the production of heavy electric equipment. It found that manufacturers had finally emerged from the war-induced squeeze of overloaded order boards and inadequate supplies of materials and labor. They now can produce 10 million kw of generating capacity a year—8 million kw thermal and 2 million kw hydro. Details of this part of the EEI report are outlined on Page 21 of this issue.

Energy Output and Percentage Increase 1949–1953
(Millions of Kilowatt Hours)

FPC Regions	1949*	1950	% Inc.	1951	% Inc.	1952	% Inc.	1953	% Inc.
I	68,091	72,974	7.2	76,107	4.3	79,861	4.9	83,574	4.6
II	56,347	60,203	6.8	63,545	5.6	67,316	6.2	71,223	5.5
III	42,728	46,659	9.1	50,524	8.4	56,052	10.9	60,107	7.2
IV	36,625	38,485	5.1	40,606	5.5	42,705	5.2	44,827	5.0
V	19,818	22,240	12.2	24,278	9.2	26,366	8.2	28,074	6.9
VI	8,451	9,171	8.5	9,813	7.0	10,417	6.2	11,036	5.9
VII	25,935	28,454	9.7	30,258	6.3	31,965	5.6	33,814	5.8
VIII	29,119	31,250	7.3	33,500	7.2	35,700	6.6	38,000	6.4
Total U. S.	287,114	309,406	7.8	328,631	6.2	350,482	6.6	370,650	5.8

* 1949 data give actual operating results
Data: EEI

W. F. Little to Receive IES Gold Medal for 1950

(See Front Cover)

William F. Little, engineer at Electrical Testing Laboratories, Inc, has been named by the Illuminating Engineering Society to receive its 1950 Gold Medal. It will be presented at ceremonies during the National Technical Conference at Pasadena, Calif., Aug. 21-25.

The medal, highest honor in the field of illumination, is awarded "for meritorious achievement conspicuously furthering the profession, art, or knowledge of illuminating engineering."

Little has been identified with the lighting field since 1903. He is in charge of the photometric department at Electrical Testing. Best known of his contributions to lighting progress has been his original work in photometry contributing standard specifications for motor vehicles, industrial, commercial, motion picture, and natural lighting. He has written several papers relating to the subject of photometry and illumination.

Active in IES for more than 25 years, Little has served as president, vice president, treasurer, and director. He has also headed many of its technical committees. In 1944, Little became one of the first ten to receive the society's grade of "fellow" and was first chairman of the board of fellows.

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BPA Fund Request Cut $430,000 by House Unit

The House Appropriations Committee has lopped $430,000 from a request of the Bonneville Power Administration for $1.1 million for extra funds for the current fiscal year ending June 30.

BPA's cut came a few days before the Deficiency Appropriation Bill went to the floor of the House where it passed May 22. Many other federal agencies and departments get a share of the bill's total of $625 million.

BPA asked for $880,000 for transmission construction funds and $230,000 for maintenance. The sums were cut to $500,000 and $180,000 respectively.

The Rural Electrification Administration is granted an additional $165,000 for salaries and expenses.

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NEW ENGLAND Rural Electrification Institute's recent annual meeting in Rhode Island brought together H. E. Gulvin, left, Rhode Island State College; F. L. Rimbach, director, rural development, New England Power Service Co; Homer Stuart, Rhode Island State College; C. W. Harris, Bristol County extension agent; W. C. Hogg, rural service engineer, Narragansett Electric Co. The program stressed ways utilities can be of aid to farmers

NAEC Calls for Sound, Equitable Federal Water Resources Policy

SOUND FEDERAL water policy requires close cooperation among the federal government, other public agencies involved in resources development, and the investor-owned electric utilities. It will take changes in administration of resource development, as well as new legislation, to effect such cooperation. But the changes must be made to insure the continued growth of the nation's economy under our present system of democratic government.

That is the essence of recommendations submitted last week by the National Association of Electric Companies to President Truman's temporary Water Resources Policy Commission. The 20-page document, NAEC reported, has the support of all its 100 member operating utility companies.

NAEC indicated the industry was willing to go a considerable distance to meet the federal government in resource development. It said the utilities favor "reclamation, flood control, navigation and other resource development and conservation measures which are economically sound and necessary for the public welfare." Such projects are "functions of the government." And where electric energy "can economically be developed" in conjunction with works of this type, "it should be developed."

But these developments should not promote "destruction of taxpaying business. Nor should they impair "the rights and responsibilities of citizens—and of their state and local governments."

First step in attaining such equitable development is the adoption of a federal water resources policy giving "to Government, to business and to the general public accurate guidance as to where they stand and what they may expect" in regard to federal activity.

In fairness to private enterprise and to state and local governments, tax inequalities deriving from federal power activities should be eliminated. This should be accomplished by legislation which would:

1. Tax net income of federal proprietary business.
2. Lift the 3.3% federal energy tax, or remove the exemption of public power agencies.
3. Levy taxes on income from securities of public enterprises.
4. Permit states and local governments to tax federal projects.

In connection with actual federal multiple-purpose developments, NAEC urged that utilities of the area, "both business managed and municipal," be given opportunity to build the power plants. If they fail to do so, the government should install the generating facilities, then endeavor to lease them or contract for their output with municipal or private utilities. When "existing distributors" will not build transmission lines to load centers, they should be federally built, after specific authorization by Congress. No federal steam generating plants should be built except where "required for the national defense."

Federal "preference clauses," giving public bodies and cooperatives priority claim to federal power, should be repealed because they "deny the benefits of this power to all of the people." Where federal power agencies are supplying large areas, their responsibilities should be "defined or limited." Other recommended legislation would give the Federal Power Commission authority to "approve, suspend or reject" rates of the federal agencies building or operating power projects.

Perhaps the most challenging recommendation of the NAEC was its proposal that an "orderly means" of building water projects be developed. It pointed out that projects calling for the eventual expenditure of more than $40 billion have been planned by various federal agencies. "It is obvious," NAEC said, "that all of these projects cannot be built at once."

The association suggested priorities for construction be established along these lines:

First—Projects designed to protect the lives and property of people.

Second—Projects designed to conserve the nation's natural wealth or to expand the sound utilization of such wealth.

Last—Projects which are designed primarily for recreation or beautification purposes.

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REA Cites Achievements on Its 15th Anniversary

The Rural Electrification Administration last week marked its fifteenth anniversary with a volley of statistics.

Here are some of REA's 15-year figures: Loans total $2.1 billion and have been made to 1,067 borrowers—977 of them farm co-ops. Rural consumers receiving central station electric service from REA-financed facilities number 3.2 million. Average power used monthly by consumers on REA-financed lines had jumped to 141 kwhr last December, two and one half times the average figure for December, 1941.

Latest REA estimates show 85% of American farms are now receiving central station service, compared with 11% in 1935. Yet to be reached are 900,000 farms.

Meanwhile, REA has just started making loans for rural telephone facilities under the new program authorized by Congress last year.

Seven borrowers—five companies and two co-ops—have been approved for phone loans totaling $778,000 thus far. REA has under consideration more than 400 other telephone loan applications.

ELECTRICAL BUSINESS OUTLOOK

How soon will we feel this boom in residential power load? J.C.B. 2

The Winter housing boom will change the pattern of residential power sales. For several months now, new housing starts have been running way ahead of year-ago figures. And the big increase has been in the [illegible]n states. That means a greater proportion of new residential [illegible]

As might be expected, the shift in building to the East has meant more new homes being built in large cities and fewer in suburbs, towns. During 1949, the number of houses started in cities of over half a million [illegible] nearly a third. Cities with 50,000 to 500,000 population had 14% more activity. Smaller towns showed only minor gains.

[illegible] result has been an increase in the proportion of new apartments to new single-family dwellings. In fact, apartment construction accounts for the entire increase in 1949 housing starts over 1948. This trend seems very likely to continue. Some high-rental apartments are going vacant. But the public housing projects, which will make up an important share [illegible] all

MEMO

Mr. Brown:
We feel it already. Plans are to reconnect our present 2300-volt system at higher voltage in the Spring of '51. In preparation, six-inch suspension insulator deadends have been installed on all new lines and old deadends will be changed every time a pole is climbed.

O-B Suspension Insulator 32933

O-B Universal Clamp
80500
81500
78500

This is standard for city distribution systems. They are also available locally from Graybar at l.c.l. prices delivered

By building these deadends now, we can change over cheap and fast when the time comes

Bob

Ohio Brass

MANSFIELD, OHIO

Distributed by GraybaR

"We have installed...

capacitors

equal to 34% of our peak-load

and have gained more system capacity in less time and at less cost than we could have in any other way"

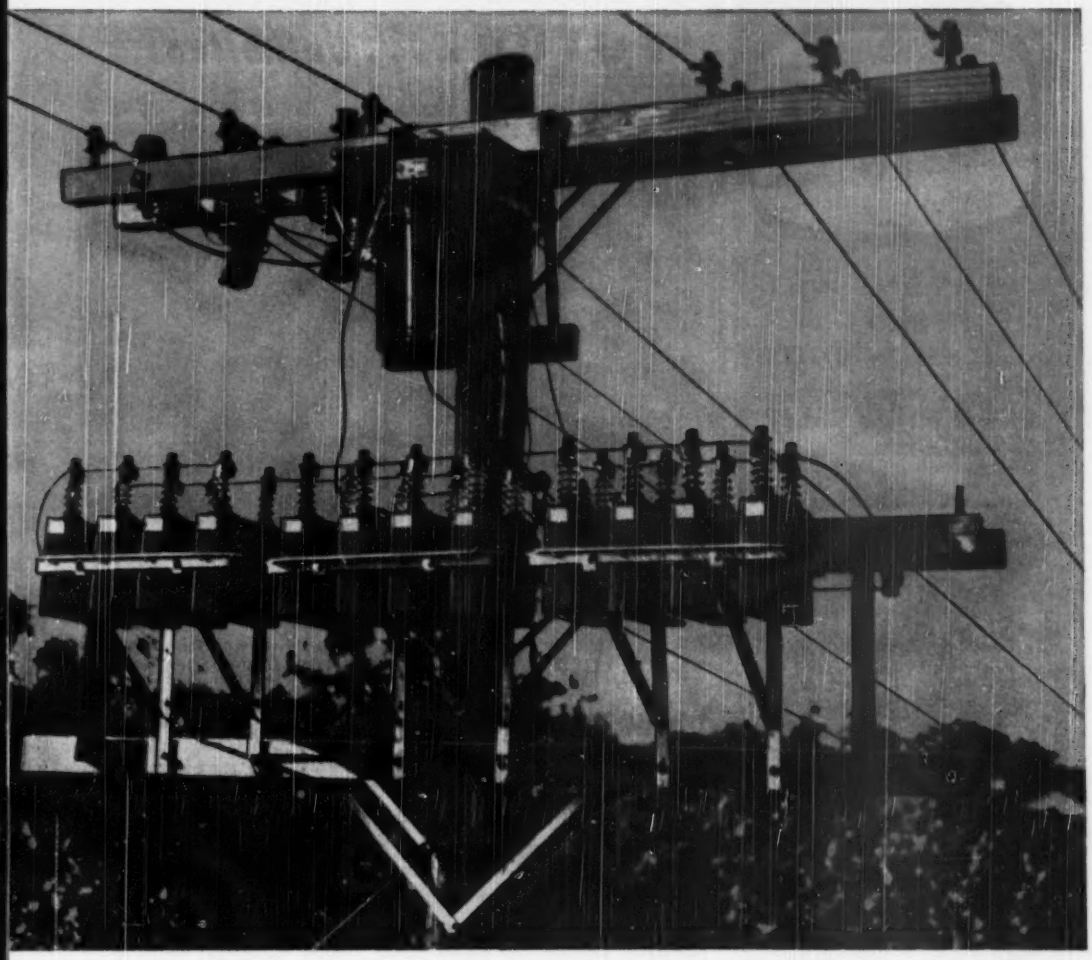
THE BROCKTON EDISON CO.

THE Brockton Edison Company has this to say about capacitors:

"By 1941, rapid increase in loads indicated a need for major system improvements. More system carrying capacity was needed. Voltage control requirements were increasing and additional voltage taps on our transmission transformers appeared necessary.

"Capacitors were considered along with other methods for increasing carrying capacity. We had three installations, the oldest dating from 1920, so we knew they were reliable. A system study showed this: widespread installation of capacitors would give us better voltage regulation and more carrying capacity than any other plan we were considering. Capacitors would cost less, could be delivered faster, and could be installed more easily. And they could be purchased a group at a time, as we needed them.

"With the installations made, we now have 34 kvar in capacitors for every 100 kva of system peak load. All are automatically switched in pole-mounted groups, located at the load center of distribution feeders. In our program, time clocks are used to control the switching of each individual installation,



so that the system benefit from the locally supplied kilovars does not depend on temporary conditions on individual feeders.

"We now have more peak-load capacity, less voltage drop and lower distribution and transmission losses, than any of our other proposals could have provided. The total cost for these capacitors has been lower than the expenditure which otherwise would have been necessary."

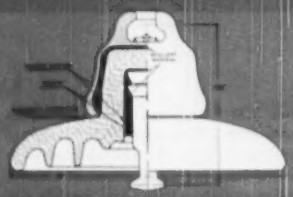
The purpose of these advertisements is to encourage electrical utilities to exchange information on the use of power-factor-improvement capacitors. We believe that such an exchange will best bring out that capacitors can be used much more widely than at present—that they provide the fastest way of increasing peak-load capacity—that they can bring many utilities extraordinary returns by increasing capacity of existing distribution lines, transmission lines, transformers and circuit breakers—and that they offer one of the best possibilities of scaling down system costs per kilowatt. If your experience with capacitors would be of interest and value to other companies, we would like to hear from you. Contact your G-E Representative or write *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

PINCO INSULATORS

9 REASONS WHY PINCO SUSPENSION UNITS are RIGHT on the Job!

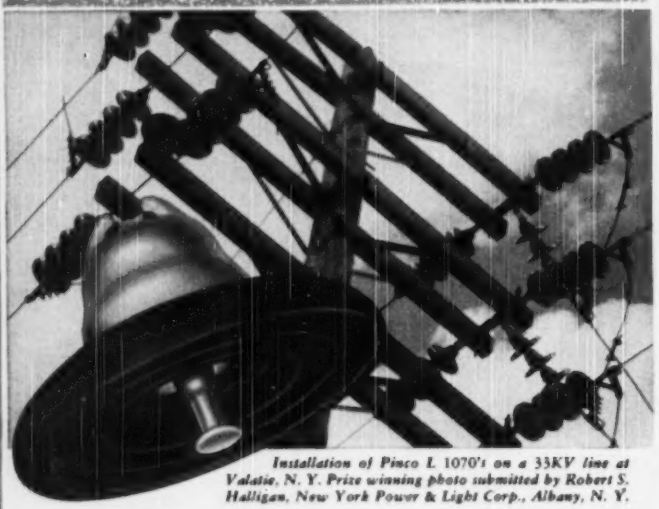
1. Pinco Porcelain . . . wet plastic process; non-porous, homogeneous, outstanding in dielectric qualities.
2. Electrical Characteristics . . . industry standards more than met.
3. High Mechanical Strength . . . assured by Pinco design refinements, quality standards, assembly techniques.
4. Rounded Edges . . . extra protection against gun shots, stones and other impacts.
5. Corset Caps . . . a Pinco innovation—minimizing possibility of corona discharge, providing most desirable loading on porcelain and giving maximum strength for weight.
6. Wrapped Forged Eyebolts . . . preventing bolt thrust on porcelain in case of mechanical impact on pin.
7. Socket Design . . . extra strength, easier installation in strings.
8. Thermal Protection . . . provided by Pinco Resilient Compound where metal joins porcelain.
9. One Design . . . on 6", 7½" and 10" diameter units, assuring typical Pinco service from all sizes.



PINCO L1060 SPECIFICATIONS

Dry Flashover	90,000 volts
Wet Flashover	50,000 volts
Leakage Distance	11½"
M & E Strength	15,000 lbs. min.

FUTURE... *Unlimited!*



Installation of Pinco L 1070's on a 33KV line at Valatie, N. Y. Prize winning photo submitted by Robert S. Halligan, New York Power & Light Corp., Albany, N. Y.

PINCO SUSPENSION INSULATORS HAVE ROLLED UP MORE THAN 30,000,000 SERVICE YEARS WITHOUT REPLACEMENT because of electrical or mechanical failure

We don't *yet* know the "life expectancy" of Pinco Suspension Units—for on installations dating back to 1921, they have rolled up this impressive service record . . . a record unmatched for superlative, trouble-free performance. Thirty successful years in designing and manufacturing insulators back up the Pinco slogan —"RIGHT for the Job . . . RIGHT on the Job . . . always!" Remember this whenever you specify and buy insulators.

See Page 65 of the Pinco Catalog No. 49 for complete electrical and mechanical characteristics.

The Porcelain Insulator Corporation
766 Main Street, Lima, N. Y.

Sales Agents: JOSLYN MFG. & SUPPLY CO.
Offices in Principal Cities

PINCO INSULATORS

Suspension Insulators . . . Switch and Bus Insulators . . . Distribution Clamps . . . Distribution Pin Types and Guy Strains . . . Transmission Line Fittings . . . Tree Insulators . . . Transformer and Circuit Breaker Bushings . . . One Piece and Multi-part High Voltage Pin Types . . . Suspension and Strain Clamps . . . Indoor Bus Support Porcelain . . . Lightning Arrester Porcelain.

• 1920 Thirty Years Service to the Electrical Industry 1950 •

Metermen and System Operators of PEA Study Industry Problems

ELECTRIC UTILITY metermen and system operators of Pennsylvania and surrounding states met last week for separate committee sessions of the Pennsylvania Electric Association.

At Bethlehem the PEA Meter Committee discussed the standardization of meter mountings, application of a single-rated 30-amp watthour meter for residential service, periodic field testing of S-type meters, and the comparative merits of phantom loads and resistance load boxes for testing in the field.

Power Factor Studied

The Systems Operation Committee, at Sky Top, examined the effect of power factor on the operation of turbo-generators and practices among companies in phasing lines and equipment.

To focus the wide range of committee opinion regarding modern mountings for S-type meters a three-man committee was appointed by the PEA meter group to examine the possibilities of standardization.

Duquesne Light Co saved an estimated $6,000 by its recent purchase of 4,000 30-amp single-rated watthour meters in preference to a 50-amp meter, E. L. Keller reported. Within the thermal capability of socket jaws the lower rated meter will do anything the 50-amp size will do, he said. The cost is 17% less. Keller's prediction that the 30-amp would not become obsolete within 30 years was widely challenged by metermen who foresaw the possibility of polyphase residential service before that time.

Resistance Load Box Favored

R. W. Pfaff, Philadelphia Electric Co, reporting for a three-man committee that has been studying the merits of phantom and resistance load boxes for field meter testing, said the resistance load box is best suited for testing small-capacity, self-contained single-phase meters. The phantom load was found superior for testing large capacity self-contained meters, especially those used with current and potential transformers.

An in-place testing rate of 60 socket meters per eight-hour day is being achieved by the three-man team working from Duquesne Light Co's new two-position mobile testing station housed in a ¾ ton truck. E. L. Keller reported that two such trucks are in use in the Pittsburgh residential area, where they have increased the rate of meter testing 20% over shop testing. The three men take turns testing and bringing meters to the truck from adjacent premises.

At the Sky Top meeting of the Systems Operation Committee W. G. Dempler, Duquesne Light Co, traced the rise in generator operating power factor during light load periods to three causes: (1) Extensive use of high voltage cable and long light voltage overhead, (2) greater use of static capacitors. Among the findings of a survey among 24 operating companies with 375 major generating units totaling 14,386,000 kva, Dempler reported that 46% of the companies have higher off-peak than on-peak power factor. However, during the past ten years there have been no major and only four minor cases of generator instability due to underexcited operation. Apparently, he observed, present limits could be raised without increasing the frequency of instability.

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Hard-Hitting Selling Needed, NELPA Told

Old-fashioned, hard-hitting, door-to-door selling was advocated by many speakers as a solution to the industry's problems at the meeting of the Business Development Section of the Northwest Electric Light and Power Association. The meeting was held at Butte, Mont., May 15-17.

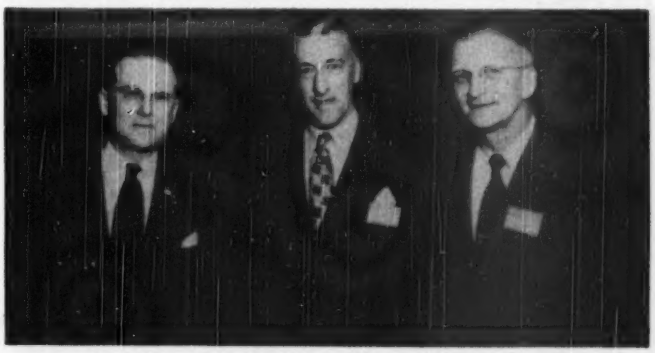
Sales leaders have a vital interest in building revenue to make it possible for management to obtain the venture capital necessary to finance private utility expansion, said T. E. Roach, president, Idaho Power Co. Venture capital is the life blood of our economy. When the day arrives that people are unwilling to invest their savings in private enterprise, then that day Socialism will have arrived. At least 25% of financing must come from common stock equities or risk capital.

One of the industry's problems, Roach continued, is to find a source of that risk capital at reasonable cost in the face of extremely high personal income taxes and the effect of double taxation in reducing dividend returns to the investor. His solution consisted of educating the public so that they would appeal to their own Congressmen and Senators to reduce federal spending, to reduce taxes, and to eliminate tax inequalities.

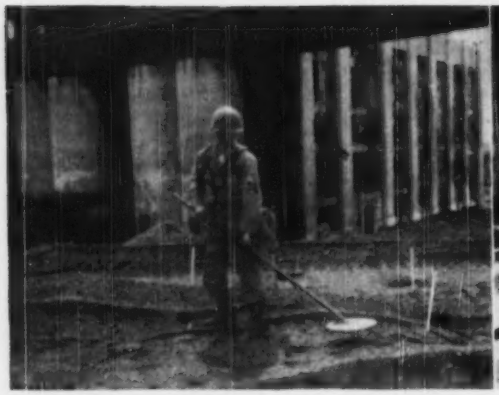
Electric utilities were told by James J. Nance, president, Hotpoint, Inc, that just as in the pioneering days they must supply a large part of the direct selling and almost all of the local promotion of new appliances. The utilities must do both a selling job and an educational job if they are to get the larger and better balanced load they desire.

E. R. Dunning, N. W. Ayer & Son, said that the wall of remonstrance against Socialism is growing as the result of the electric companies' magazine and radio advertising program. It is beginning to cause a lot of wounded feelings in Washington and is hitting the mark. He cited one advertisement that drew requests for 51,000 reprints as a sign of the effectiveness of the program.

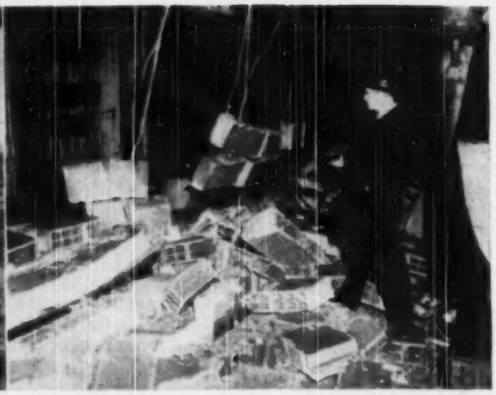
R. L. Wilkinson, Inland Empire Electrical Dealers Association, said that appliance dealers are suffering from lack of sufficient margin and the franchising of too many dealers by distributors. Dealers need local and national leadership from utilities, he claimed.



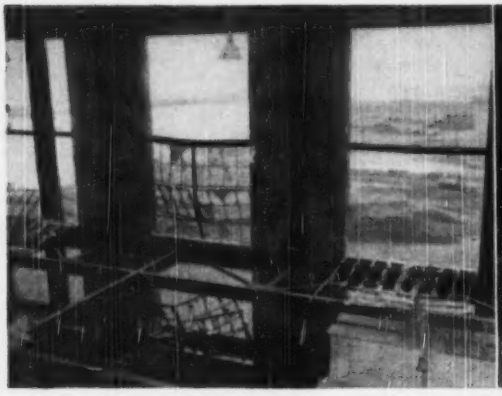
SPEAKERS at NELPA Business Development Section's conference included T. E. Roach, left, president of Idaho Power Co, and H. N. Walters, British Columbia Electric Railway Co and association president. E. A. Olson, right, Idaho Power Co, is section chairman



DETECTING mines in the coal pile following the explosion



WALL of condensor room is nothing but a pile of rubble



SMASHED windows were the most prevalent type of damage

CREW clears away broken glass and debris in boiler room

SOUTH AMBOY PLANT of Jersey Central Power & Light Co as seen from the air before explosion. Arrow indicates where the barges loaded with munitions were moored

South Amboy Plant Back on Line after Explosion

Three and a half days after the disastrous explosion of munition-laden barges at a nearby pier, the South Amboy Plant of Jersey Central Power & Light Co was back in full operation. Damage has been estimated at $350,000. It is believed that most of the damage is covered by insurance. All injuries to personnel were slight.

The explosion occurred at 7:26 pm, May 19, on a barge containing anti-personnel mines and shells. The barge was about a quarter mile away (See picture at right). The force of the explosion blew in most of the windows. The boiler room on the side facing the barge was hit hardest. As soon as the explosion occurred the watch engineer took the station off the line and the boiler crew began to cool the boilers. The plant has two 25,000-kw units.

All load was switched to the Sayreville Plant, and this plant began draw-

ing energy from the NY-NJ-Pa interconnection. There were only two 12-minute interruptions in two sections of South Amboy. There was little damage to distribution and service lines. Voltage was low for a time until a winch blow from a barge could be removed from the substation where it had landed on a transformer bank.

It was necessary to keep the boiler room closed until Army experts could be secured to remove the anti-personnel mines. One mine exploded after 11 pm but did little damage. The roof of the plant was covered with mines. Some 1,700 mines were removed from company property before operations were restored. Army experts believed that an equal number was still to be sought out. A coal pile of 17,000 tons must be screened before it can be used. In the meantime the plant is operating on oil.

•

Truman Signs, Blasts $1.8 Billion Resources Bill

President Truman May 17 signed the $1.8 billion Omnibus Rivers and Harbors and Flood Control Authorization Bill, but followed his approval—a short five days later—with an unprecedented blast at the law which he had okayed.

Terming the bill a "piecemeal approach" to resource development, the President attacked failure of the act to provide for fuller participation of other government departments in the projects authorized for construction by the Army Corps of Engineers. He was most concerned by authorizations approved for three areas: New England, the Arkansas, White, and Red River basins in Arkansas, and the Northwest.

No money was appropriated by the bill which authorized more than $1.2 billion for flood control projects, more than $203 million for rivers and harbors, $200 million for reclamation projects in the Missouri basin, and nearly $47 million for surveys and other items.

•

PUD Grants Increase

Workers have accepted an hourly wage increase of 8¢ offered by the Gray's Harbor County PUD. The raise, which affects about 100 employees, is retroactive to Jan. 1.

•

Franchise Is Renewed

Public Service Co of Oklahoma has been voted a 25-year renewal of its franchise by Spavinaw, Okla. The company has been serving the town since 1925.

SEC Delays Action on 2 Petitions for Dissolution of American P&L

SECURITIES and Exchange Commission has delayed action—at least temporarily—on two new requests to speed the dissolution of American Power & Light Co.

The New York holding company already had advised SEC it would reply to a similar petition filed with the Commission late last month by American stockholder H. Lane Ogle (EW, May 1, p 6). If this reply is forthcoming within a reasonable time, the Commission is expected to consider it together with a petition of the Public Service Commission of Washington State and that of representatives of holders of 100,000 shares of American common stock.

The Washington PSC limited its request to removal of American's holding company status over the Washington Water Power Co. It urged SEC to order either the distribution of American's capital stock in WWP to the stockholders of American or a sale at competitive bidding of the stock.

Group Asks Distribution

A group headed by the firms of Goldman, Sachs & Co of New York and Gerstley, Sunstein & Co of Philadelphia joined with Ogle in seeking pro rata distribution of American's remaining securities and its cash assets among American's common stockholders. The group said it represented "directly and indirectly" holders of "in excess of 100,000 shares" of American common. Ogle previously reported he held 1,700 of the total 2,342,411 outstanding shares of American common.

The Washington PSC pointed out American sought SEC permission last year to continue in existence as a holding company over WWP and Pacific Power & Light Co. This plea, on which SEC reserved a ruling, was based on claims of operating economies to be derived by the two subsidiary companies from single ownership. American also contended it could more easily arrange for the sale of the properties if it retained both.

Commission Urges Dissolution

By sale of Pacific last February to a group of independent purchasers, the Washington commission asserted, "American by its own act has eliminated all practical possibility of maintaining Washington and Pacific in common ownership." Thus, "whatever legitimate advantage from the standpoint of the public interest might have been served by temporarily allowing American to continue in existence as a holding company over Washington and Pacific no longer exists."

The Washington commission charged that "continued ownership by American" of WWP's voting securities "would be detrimental to the public interest, particularly the interests of the consumers." Such ownership would leave control of the operating utility in the hands of persons remote from its service area; American could not make any contribution to efficient management and operation of WWP; and localized management, efficient operation, and effective regulation of WWP would be impaired, the PSC concluded.

The Goldman, Sachs & Co-Gerstley, Sunstein & Co petition asked SEC to apply to an appropriate court for an order forcing dissolution of American. Specifically, the group requested distribution among the common shareholders of the $16,125,000 proceeds of American's sale of Pacific, of American's common stock holding in Washington Water Power, and of all cash not needed to meet American's tax and other obligations.

The group recommended the proposed dissolution plan submitted to SEC by Stockholder Ogle as a possible basis for such an order. The Commission has taken no action on the Ogle plan nor upon his subsequent petition for either enforcement of the plan or early determination by SEC as to whether American could continue to retain its stock and cash holdings.

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Congress Won't Act in '50 on St. Lawrence Project

There will be no Congressional action this year on the proposed St. Lawrence River seaway and power project. The House Public Works Committee voted May 11 to set aside further hearings on the project.

The committee announced that it would not act until the Senate had considered legislation authorizing the project. No Senate action is expected on the measure this year because of the pressure of other measures.

The House committee's move came after several weeks of hearings in which proponents of the plan had testified. Opponents still were to be heard when the committee voted to shelve the hearings.

FINANCIAL

Electric Utility Financing of Last Two Weeks

Company	Description	Amount of Offering (000)	Offering Price	Yield at Price to Public
	WEEK ENDED MAY 20			
Bonds				
Ohio Edison	2⅝% 1980 ref	$ 58,000	102.25%	2.76%
Oklahoma Gas & Electric	2⅛% 1980 ref & new money	17,500	102.129	2.77
Preferred				
Southern Calif Edison	1 mil sh 4.08% $25 par new money	25,500	$25.50	4.00
Maine Public Service	30,000 sh 5½% $20 par new money	600	20.00	5.50
	SCHEDULED WEEK ENDED MAY 27			
Bonds				
Interstate Power	1980 ref	3,000		
Preferred				
Interstate Power	100,500 sh $50 par ref & new money	5,000		4.55 (approx.)
Iowa Public Service	50,000 sh $100 par new money	5,000		
Common				Rights
Interstate Power	275,000 sh new money	2,000		
Wisconsin Power & Light	320,231 sh new money	5,000		1 for 5
California Electric Power	180,000 sh new money	1,500		

FPC's Accounting Job 'Substantially Concluded'

Establishment of electric utility plant on an original cost basis is "substantially concluded," the Federal Power Commission reports in a summary of its accounting reform program.

Except for isolated cases, says the report, "electric plant is stated in prescribed, detailed accounts on an original cost basis; the original cost of plant by functions, by accounts and by large units is recorded in the accounting records; depreciation accounting has been substantially reformed."

Eliminations of approximately $1.5 billion held by FPC to be in excess of original costs have been ordered or approved by the commission in the 13 years since its accounting regulation program began. Use of depreciation accounting also has been increased. Percentagewise, depreciation reserves doubled, from approximately 11% of plant to approximately 22%, between Dec 31, 1937, and Dec 31, 1948.

Either the commission's uniform system or the similar system adopted by the National Association of Railroad and Utilities Commissioners is now in effect for more than 90% of the electric utility industry, measured by assets and revenues. All but five state regulatory bodies have adopted one of these systems.

In the entire reclassification and original cost program there have been only 12 formal proceedings before the commission, the report says. Only four of these were appealed to the courts; three were decided in favor of FPC and the fourth is still in litigation. Only two unresolved conflicts with state regulatory commissions have occurred.

RECENT RATE CHANGES

Ohio Edison Co, Akron, has been allowed by the Federal Power Commission to increase its rates for sale of energy to Pennsylvania Power Co, New Castle, a wholly owned subsidiary. The increase granted is only half as large as the one requested by Ohio Edison. Retroactive to May 8, the revised schedule will boost Penn Power's payments by $111,088 annually. The commission suspended the earlier schedule Feb 28 because it said cost data were incomplete and "did not appear to support the proposed increased rates or charges."

British Columbia Electric Co has reduced residential rates in Lytton, B. C., by 75% after taking over the system there. The rates, the same as those in effect in Squamish, will include a charge of $3.80 for 100 kwhr a month, compared to $14.55 under the old scale, and $7.20 for 300 kwhr, compared to $35.05. Street lighting and industrial power rates also were reduced.

Orlando (Fla.) Utilities Commission has made a minimum commercial rate reduction of 5%, effective June 1. Greater reductions will be made for those using more than 5,000 kwhr a month.

FINANCIAL BRIEFS

A liquidation plan for Middle West Corp which would give common stockholders an initial cash payment of $2.50 a share has been approved by Securities and Exchange Commission. Holders of script certificates, receiver's receipts, and certificates of deposit issued in connection with the reorganization of Middle West's predecessor, Middle West Utility Co, will receive a cash distribution.

Middle South Utilities, Inc, plans to offer up to 400,000 additional common shares to preferred stockholders of its subsidiaries, Arkansas Power & Light Co, Louisiana Power & Light Co, and Mississippi Power & Light Co, as part of redemption of the preferred. The proposal, believed to be the first of its kind in recent utility financing, is designed to permit preferred stockholders of the subsidiaries to remain investors in the system even though their stock has been called.

Circuit court in St. Petersburg has granted Florida Power Corp an injunction halting enforcement of a $500,000 rate cut ordered last month by the Pinellas County Utility Board. Florida Power is seeking a rate increase instead.

Kansas City Power & Light Co has called a special meeting of stockholders for June 8 to authorize an additional $15 million of bonds.

United Light & Railways Co has asked SEC permission to distribute to holders of its common stock its interest in Eastern Kansas Utilities, Inc. The distribution would be preceded by a reclassification of the 14,000 outstanding $100-par shares into 100,000 shares of no-par stock and the purchase by Railways of an additional 26,993 shares of the reclassified stock.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds 1st	Bonds 2nd	Bonds 3rd	Preferred Stocks 1st	Preferred Stocks 2nd	Preferred Stocks 3rd	Common Stock 1st	Common Stock 2nd	Common Stock 3rd
DATE									
1950									
May 18	2.62	2.68	2.74	3.77	3.99	4.32	5.06	5.97	6.63
May 11	2.62	2.64	2.73	3.76	4.00	4.34	5.13	5.96	6.72
END OF QTR.									
1st 1950	2.59	2.61	2.71	3.78	4.01	4.36	5.22	5.85	6.67
4th 1949	2.59	2.61	2.72	3.85	4.06	4.46	5.37	6.15	7.01
3rd 1949	2.61	2.65	2.77	3.88	4.15	4.54	5.55	4.67	7.51
2nd 1949	2.69	2.75	2.88	3.98	4.26	4.66	5.94	6.90	8.14

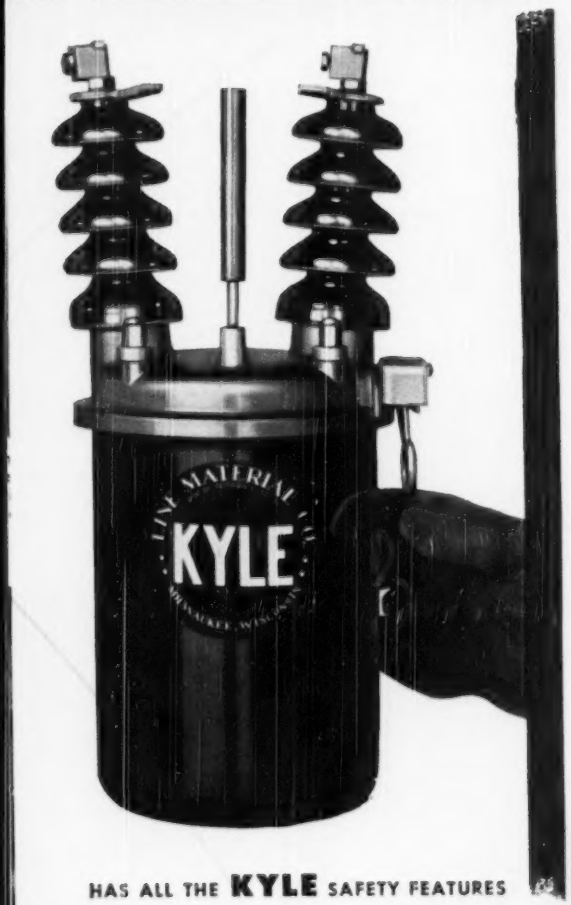
Data: Reis & Chandler, Inc. •

KYLE -TYPE GS AUTOMATIC OIL SECTIONALIZER

Isolates permanent faults on branch lines of recloser-protected systems

Kyle automatic oil sectionalizers provide dependable automatic protection against permanent faults on branch lines. They do not open on temporary faults, but operate to disconnect the branch only after one, two, or three operations of the back-up recloser have failed to clear the fault. After the third recloser operation, the contacts of the sectionalizer open up while the recloser is open. Thus the faulted branch is disconnected, and the recloser resets itself and maintains service on the rest of the system.

The sectionalizer may be set to open on a permanent fault after one, two, or three operations of the recloser, as desired. Since the sectionalizer does not interrupt short circuit currents, contacts last indefinitely, and there is no carbonization of the oil.

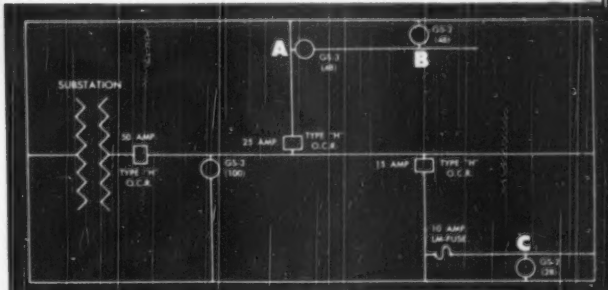


Get the whole story !

For details, dimensions, ratings, mountings, and a complete description of how Kyle type GS sectionalizers operate, ask the L-M Field Engineer for a copy of this Bulletin CR3, or write Line Material Co., Box 2077, Milwaukee 1, Wisconsin.

To Protect Your Lines with Kyle Type GS Sectionalizers

The diagram shows how it is done: *Point A* shows a sectionalizer set to open on the third recloser operation, indicated by GS-3. *Point B:* further sectionalizing by setting the sectionalizer to open on the second operation of recloser—indicated by GS-2. *Result:* a permanent fault beyond *B* causes sectionalizer GS-2 to lock out after second recloser operation; service is maintained on the branch protected by sectionalizer GS-3 at *A*. *Point C:* Sectionalizer GS-2 set to open on second recloser operation isolates a permanent fault before the back-up fuses are damaged or blown by the third operation of the recloser. Kyle Sectionalizers also will replace branch line fuses on systems protected by Kyle Type H Reclosers, giving you complete automatic protection.



HAS ALL THE KYLE SAFETY FEATURES

1
Tank, cover, and operating handle are dead. Tank may be grounded.

2
Mechanism cooled, and insulated from tank, by transformer oil.

3
Standard cover type bushings. Terminals are the only hot spots.

4
Trip-free operating handle.

RATINGS:

Seven sizes, with minimum tripping current 8 to 100 amps to coordinate with reclosers rated from 3 to 50 amps; maximum operating current 150 to 1200 amps; 2400 to 15,000 volts. Ratings may be changed by changing coils in the field. Weight with oil about 20 pounds. Crossarm or direct pole mounting hangers.

7120

LINE MATERIAL Kyle Sectionalizers

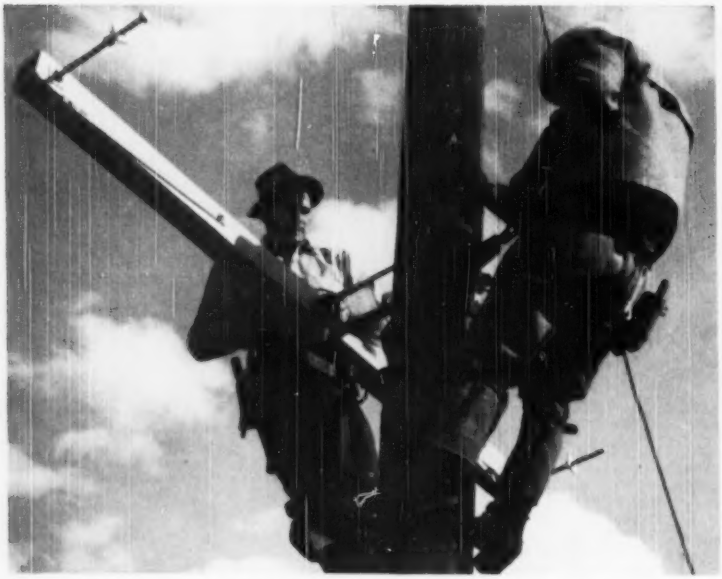
Complete Coordinated Equipment for Distribution Today

Apprentice School

Washington Water Power Co Conducts 3-Year Course for Operating Staff

ELEMENTARY theory of electricity is basis and starting point for these students. Apprentice linemen, substation mechanics, metermen, and substation and plant operators sign a formal three-year agreement, attend on their own time five hours of classroom lectures at the Spokane Trade School one Saturday each month from September through May. Between monthly classes they must complete weekly home study lesson assignments to advance in their apprenticeship. The company pays transportation and one meal for men from out of town. Course is no snap and demands earnest application on part of student

SECOND-YEAR students receive more spec graphic explanation of an electronic circuit. training work for their specialty. Instructors cooperating with the Federal Apprentice Train



LINEMAN apprentices in alternate months of the second year are given actual demonstrations of construction methods, safety practices, and use of hot-stick tools. Hot-stick practice periods are held at either an outdoor or an indoor company field course at Spokane

SUBSTATION mechanic apprentices spend c repair shops, taking apart and putting toget equipment. Field instructors are WWP employ

struction of a practical nature, such as this
class days are spent by the students in field
ished and paid by the Spokane Trade School,
a

ACTUAL materials and equipment play an important part in the specialized classroom lectures for the second-year apprentices. Linemen are given lectures on subjects related directly to line work, and in other classes substation mechanics study equipment and operating procedures

months at field practice work in the company
dard transformers, circuit breakers, and other
are paid by the Spokane Trade School

APPRENTICE TRAINING COMMITTEE must approve before union will allow apprentice to take union examination for full journeyman. Committee consists of one journeyman lineman, substation mechanic, and meter tester, and three representatives of Washington Water Power Co management

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Now... current transformers that match switchgear ratings!

Just read the nameplate to find the continuous rating of the new current transformers now installed in Westinghouse Metal-Clad Switchgear. There's no need to derate in accordance with ambient temperature.

In accordance with A.S.A. Standards, current transformers are normally built with an average ambient of 30°C, whereas the switchgear inside maximum operating temperature is 55°C. This has made necessary a derating of the transformer. In the past Westinghouse Switchgear has, of course, been adequately designed, but it has been necessary to calculate new operating data when operating conditions are changed.

The new Westinghouse line of current transformers is base-rated on a 55°C ambient base. They carry their nameplate current rating continuously. No longer need you figure currents and derate transformers—now *you read current on the nameplate directly* when the switchgear is installed and when operating conditions change.

This Westinghouse plus value is another example of how Westinghouse maintains leadership in Metal-Clad Switchgear design.

Write for complete information about other features of Metal-Clad Switchgear in Bulletin B-4016. Address Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-60716

Westinghouse

METAL-CLAD SWITCHGEAR

January Energy Sales 5.3% Over Year Before

January sales of electric energy were 5.3% higher in 1950 than in 1949.

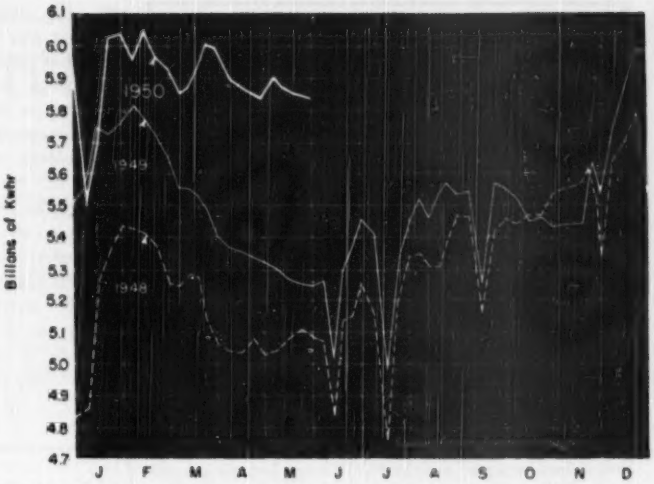
Sales to ultimate customers totaled 22,943,238,000 kwhr in January this year, compared to 21,797,918,000 kwhr for the corresponding month last year. Revenues from ultimate customers amounted to $425,325,400, or 6.7% above the $398,457,000 received in January, 1949.

For the 12 months ended Jan 31 average use per residential customer was 1,700 kwhr, or 7.9% above the 1,575 recorded the previous year; the average annual bill was $50, or 5.8% higher than the year before's $47.25; and revenue per kilowatt hour was down 2%, from $3 to $2.94.

Classification of Sales, January

Kilowatthour Sales January	Million Kwhr 1950	1949	Percent Change
Residential or domestic	6,276	5,425	+15.7
Rural (Distinct rural rates)	409	459	−11.0*
Commercial or industrial			
Small light & power	4,181	3,833	+9.1
Large light & power	10,602	10,613	−0.1
Street and highway lighting	287	266	+8.0
Other public authorities	602	560	+7.5
Railways and railroads			
Street and interurban	321	359	−10.4
Electrified steam railroads	215	236	−9.0
Interdepartmental	49	46	+ 7.5
Total to ultimate customers	22,943	21,798	+5.3

* Negative percentage due to reclassification.



Output Week Ended May 20—5,844,561,000 Kwhr

Weekly Output, Millions Kwhr

1950		1949		1948	
May 20	5,845	May 21	5,255	May 22	5,085
May 13	5,864	May 14	5,257	May 15	5,109
May 6	5,872	May 7	5,284	May 8	5,087
Apr 29	5,902	Apr 30	5,304	May 1	5,042
Apr 22	5,846	Apr 23	5,326	Apr 24	5,027
Apr 15	5,863	Apr 16	5,343	Apr 17	5,087
Apr 8	5,898	Apr 9	5,360	Apr 10	5,633
Apr 1	5,992	Apr 2	5,378	Apr 3	5,037
Mar 25	5,993	Mar 26	5,404	Mar 27	5,065
Mar 18	6,015	Mar 19	5,496	Mar 20	5,145
Mar 11	5,937	Mar 12	5,531	Mar 13	5,285

Percent Change from Previous Year

	May 20	May 13	May 6
New England	+15.0	+13.9	+15.1
Mid-Atlantic	+10.1	+ 9.1	+10.6
Central Industrial	+11.0	+12.8	+12.0
West Central	+ 8.6	+ 9.5	+12.5
Southeast	+11.7	+13.0	+12.0
South Central	+11.5	+16.0	+12.1
Rocky Mountain	+11.4	+11.3	+ 9.3
Pacific Coast	+12.3	+ 9.4	+ 7.9
Total United States	+11.2	+11.6	+11.1

MEETINGS

Pacific Coast Electrical Association
Annual Convention, Mapes Hotel, Reno, Nev., May 31-June 2.

Edison Electric Institute
Annual Convention, Auditorium, Atlantic City, N. J., June 5-7.

American Institute of Electrical Engineers
Summer General Meeting, Huntington Hotel, Pasadena, Calif., June 12-16.

National Association of Electrical Distributors
Annual Convention, Convention Hall, Atlantic City, N. J., June 12-16.

Pennsylvania Electric Association
Relay Committee, Castleton Hotel, New Castle, Pa., June 15-16; Electrical Equipment Committee, Abraham Lincoln Hotel, Reading, Pa., June 19-20.

Canadian Electrical Association
Annual Convention, Manoir Richelieu, Murray Bay, Que., Canada, June 15-19.

American Society of Mechanical Engineers
Semi-annual Meeting, Hotel Statler, St. Louis, Mo., June 19-23.

American Society for Testing Materials
Annual Meeting with Exhibit of Testing Apparatus and Related Equipment, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-30.

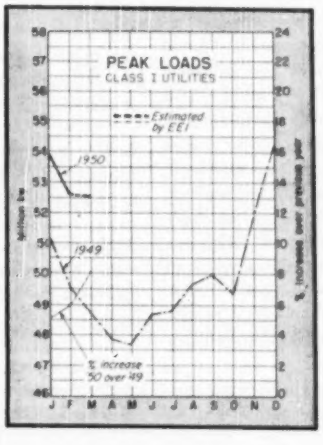
CIGRE
International Conference on Large Electric Systems, Paris, France, June 29-July 8. I. W. Gross, secretary, American Gas & Electric Service Corp., 30 Church St., New York 8, N. Y.

14 Co-ops in East May Set Up Generating Federation

Fourteen electric cooperatives in Maine, New York, Vermont, and New Hampshire are investigating the possibility of forming one or more generating federations to construct steam plants with funds borrowed from the Rural Electrification Administration.

Decision to employ an engineering firm to study the problems of building their own generating facilities was made by the co-ops at the first meeting of the Northeast Electric Cooperative Association held recently in Burlington, Vt.

More than 100 persons attended the meeting at which the association was organized. Member co-ops include six located in Maine, five in New York, two in Vermont, and one in New Hampshire. Frank Sahlman, manager of the Washington Electric Cooperative, Barre, Vt., was elected president of the association.



Leases Municipal System

The lease of electrical facilities in Forrest City by Arkansas Power & Light Co has received the approval of the State Public Service Commission. The lease is for 30 years at $51,000 a year.

To Drop Heating Service

Ohio Power Co has been authorized by the State Public Utilities Commission to abandon permanently its steam heating service in New Philadelphia, Ohio, effective June 30, 1952.

IN THE INDUSTRY

WILLIAM B. WHICHARD

BAD NEWS for many power companies—not just those in the Southwest—loomed in Oscar Chapman's recent announcement of the demise of the "Oklahoma contract." Bad news for all the companies in the Southwest, the West and the Southeast which, up to then, still hoped they could reach an agreement with the Interior Department to avert all-out federal competition. There isn't going to be any such arrangement so long as Chapman can prevent it.

The "Oklahoma contract" never was a contract, of course, despite the fact that it was agreed upon and signed by Southwestern Power Administrator Douglas Wright and representatives of Oklahoma Gas & Electric Co and Public Service Co of Oklahoma. It never became a legal document because it also had to get the approval of the Secretary of Interior. And though Chapman dickered with the Oklahoma companies and Wright from last December 22 until less than a month ago, it's doubtful that he ever came close to giving it his blessing.

That implication was clear in his report to a group of Senators that the deal was off (EW, May 22, p 92). Sketching the history of the negotiations on the "Oklahoma contract," Chapman said he found many objectionable features in the proposal after Wright first submitted it to him in December. Most of these features, he admitted, were eliminated subsequently in further negotiations with the companies. In other words, the companies made concessions acceptable to Chapman on these points. Then came the objection that proved the final snag. This was Chapman's protest against a provision that SPA pay the companies at their wholesale rates for serving over their facilities any municipal systems previously supplied by the companies. Chapman suggested language eliminating this feature. The companies rejected his amendment. Whereupon the negotiations were declared terminated by the Interior Secretary.

This was not the only time a power company had found itself closed out of such negotiations by the unilateral action of the Secretary of Interior. The Pacific Gas & Electric Co, another of the utilities with which Interior last year was urged by a Congressional committee to seek an agreement, claims it received even shorter treatment. Early this year PG&E handed Bureau of Reclamation representatives a set of proposals drafted as the basis for a formal contract. Like the proposed Oklahoma agreement, the proposals contemplated the serving of federal power customers throughout the company's service area. But the next word the company received on the subject was a report that Chapman had told Congressmen he would not accept the PG&E proposals.

Discussing the Oklahoma negotiations, Chapman suggested a different type of contract might yet be worked out. His suggestions included "the simplest possible wheeling and exchange arrangements" or a sale to an individual company of "peaking capacity for as short a duration as possible" in exchange for steam from the company to firm up SPA's hydro output. In short, nothing that might conceivably cramp SPA's future plans for building its own facilities wherever and whenever it sees fit.

Except for negotiations along these lines, any approach toward a contract with Interior is likely to represent a waste effort on the part of the companies. So long as Congress appropriates funds liberally for Interior's power agencies—and who thinks it won't in this election year?—Chapman is almost certain to stand his ground on contracts. So the logical site of the next round of the contract fight is the Capitol, not an Interior office.

TECHNICAL NOTES

ARCHER E KNOWLTON

Coal fires are unlikely in compacted piles but it is well to provide, (1) Drainage to avoid pools of water and (2) chutes to avoid loosening and washouts on the slope.

Unit factory-built substations need to offer the same impulse insulation levels and freedom from moisture troubles that are normally and readily achieved in company-designed substations.

Current-limiting fuses afford a good way to modernize industrial distribution systems at the load utilization points.

Power transformers can be made as large as the transportation facilities will accommodate. Advances in design have dimensional reductions as a primary goal.

Gas turbines may prove to be the means of using the low calorific gas that comes from underground gasification of coal deposits. They can be moved readily when the fuel is exhausted.

Boiler practice varies widely as to the time allowed between off-the-line and draining; the spread is from 4 to 72 hr with the average between 24 and 30.

Right-of-ways are getting harder to acquire and that makes transmission and subtransmission a field in which optimism about future loadings should be given generous latitude.

Earth moving equipment was not designed for coal of 2/3 the weight per cu yd; why should not some be so designed to improve results for coal-burning utilities?

MANUFACTURERS and MARKETS

Orders and Open Manufacturing Capacity for Electrical Equipment, 1950–1953

Capacity Shipped or Scheduled	1950	1951	1952	1953
LARGE STEAM TURBINE-GENERATORS (10,000 Kw and Larger)				
For U. S. Utilities	5,466,500	3,580,000	1,675,000	60,000
For U. S. Industrials	130,000	115,000	.....	.....
For Outside Continental U. S.	243,500	837,500	70,000	.....
Total	5,840,000	4,472,500	1,745,000	60,000
Estimated Open Capacity	46,000	2,300,000	5,200,000	6,900,000
SMALL STEAM TURBINE-GENERATORS (4,000 to 9,999 Kw)				
U. S. Utilities	196,000	7,500	.....	.....
U. S. Industrials	83,500	5,000	.....	.....
Outside Continental U. S.	33,700	22,500	.....	.....
Total	313,200	35,000	.....	.....
Estimated Open Capacity	240,000	1,175,000	1,200,000	1,200,000
WATER-WHEEL GENERATORS (4,000 Kw and Larger)[1]				
For U. S. Utilities	983,865	1,194,065	691,715	440,085
Outside Continental U. S.	325,150	262,650	84,200	.....
Total	1,309,015	1,456,715	775,915	440,085
Estimated Open Capacity	80,000	360,000	1,040,000	1,500,000
POWER TRANSFORMERS (500 Kva and Larger)[2] KVA				
For U. S. Utilities and Industrials	27,178,000	8,745,000	1,171,000	267,000
For Outside Continental U. S.	1,645,000	1,299,000	.....	.....
Total	28,823,000	10,044,000	1,171,000	267,000
Estimated Open Capacity	13,000,000	35,000,000	44,000,000	45,000,000

[1] Figures in kilowatts [2] Figures in kilovolt amperes

Manufacturers Have Capacity to Take More Equipment Orders, EEI Says

Manufacturers of heavy electric power equipment could meet "a considerable increase" in volume of business during the next four years. This summarizes the semi-annual capacity report of Edison Electric Institute. The report is based on figures supplied by 19 of the nation's leading manufacturers of heavy electrical power equipment. These firms supply practically all of the heavy equipment used by electric utilities.

The EEI report covers such products as generators, steam and hydro turbines, boilers, and transformers. It includes the amount of material ordered for delivery before the end of 1953, delivery schedules for the different equipment, and the amount of open manufacturing capacity available.

Electrical manufacturers will ship approximately 16,447,430 kw of steam and hydro generators in 1950-1953. Aggregate capacity of such equipment that could be manufactured and shipped in this period if orders were placed early enough totals some 21,241,000 kw (See table). Full manufacturing capacity is approximately 10,000,000 kw a year.

Approximately 12,117,500 kw of large steam turbine-generators has been shipped or is on order and scheduled for shipment during the four years. Open manufacturing capacity for production of additional large generating units is estimated at 14,446,000 kw.

Present delivery schedules for units of large size vary from 20 to 24 months. The open capacity of 2.3 million kw shown in the table for 1951 is available for all sizes, with delivery of the larger units starting about the last quarter of 1951.

Full manufacturing capacity for building large steam turbine-generators is approximately 7 million kw a year and for smaller ones about 1 million kw annually.

Delivery schedules on smaller units run from about 8 to 12 months. There still remains 240,000 kw of open manufacturing capacity for 1950. For 1951 it increases to 1,175,000 kw, and in 1952 it will reach full proportion, estimated at about 1.2 million kw.

Shipments made and scheduled of small turbo-generators total 348,200 kw for 1950-53.

Full manufacturing capacity for water-wheel generators is about 2 million kw a year. Shipments for the four years will be about 3,981,730 kw and open capacity about 2,980,000 kw.

The 80,000 kw of open capacity reported for 1950 is available for small physical size units only, with larger sizes available next year. Delivery schedules range from about 8 to 14 months for the smallest units to 18 to 24 months for the largest.

Shipments of steam generators 450 psi pressure and over scheduled through 1952 total about 84,634,000 lb per hr, with about 418,000 capacity open through 1953. Current delivery schedules vary from 6 to 14 months. Some 37 million lb of steam per hour is available in the last quarter of 1950. Large open capacity is available for units of all sizes in 1951 and 1952 and full capacity of about 140 million lb of steam per hour annually for 1953.

Open capacity totals 7,400,000 hp for hydraulic turbines of 5,000 hp and larger in the 1950-53 period. Current delivery time is 9 to 14 months for small physical size units and 14 to 22 months for larger ones. Some 1.6 million hp of open capacity is available for 1951 for all except very large units, and they can be delivered during the first quarter of 1952. Total manufacturing capacity is estimated at about 3.5 million hp per year. Shipments scheduled for the four years total 5,355,740 hp.

For power transformers 500 kva and larger capacity shipped or on order amounts to 40,305,000 kva, with 137 million kva open. Current delivery time ranges from 3 to 5 months for small size units and 7 to 12 months for large size units. Open capacity of 13 million kva is available during the third quarter of 1950 for smaller units and in the fourth quarter for larger ones. Close to full manufacturing capacity of some 45 million kva annually is available for 1952 and 1953.

•

Revise Gas Safety Code

Two new gases, hydrocyanic acid and chlorine, have been included in the revision of the American Standard Safety Code for Identification of Gas-Mask Canisters (publication K13.1-1950) issued by the American Standards Association. The code gives the individual color or marking to be used on each gas-mask canister indicating the type of gas or vapor against which it provides protection. The standard, first revision in 20 years, was developed by

a committee representing manufacturers, users, insurance companies, and the government.

•

Run-Off Vote to Decide Union at Westinghouse

A run-off election will be held at Westinghouse's main plant at East Pittsburgh between the new IUE-CIO and the UE-ex-CIO electrical unions. This was decided by the NLRB after neither side objected to the recommendation of the regional RLRB director that a run-off was necessary.

IUE garnered a 100-vote edge over its rival in the April 27 election, 5,763 to 5,663, but was just short of the necessary clear majority of valid votes cast. If these workers don't change their vote, a small group of other employees will decide which union will get the plum of 12,000 dues payers. They are the 170 employees who voted "no union," some of the 147 whose ballots were challenged, and a few who failed to vote last month and will have a chance to cast a ballot next time.

•

Copper, Aluminum Up

The long-awaited boost in the price of copper came in the week ended May 22, when the Connecticut Valley quotation rose 1¢ a lb to 20½¢. Aluminum Co of America announced a ½¢ a lb increase in the price of standard 99% aluminum ingots, to 17½¢, the first jump made since October, 1948. No. 1 heavy steel scrap, Pittsburgh, was up $1 a ton, to $37, and Straits quality tin rose slightly. Other metals prices listed by ELECTRICAL WORLD remained unchanged.

Metals Prices

May 22, 1950

COPPER, Conn. V., lb	$ .20½
LEAD, N. Y., lb	.12
ZINC, prime Western, E St. Louis, lb	.12
TIN, Straits qual, N. Y. lb	.77¼
ALUMINUM, base price	.17½
NICKEL, base price	.40
STEEL billets, Pitts., ton	53.00
STEEL scrap, No. 1 heavy, Pitts., ton	37.00

MANUFACTURING BRIEFS

Ohio Edison Co, which bought the first "CSP" transformer made by Westinghouse Electric Corp in 1933, recently was presented with the 1,000,001th as a gift in recognition of the utility's pioneering in this type of transformer.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Arizona-Nevada—Bureau Reclamation, Dpt. Interior, Aviola Bldg., Phoenix, Ariz., Constructing Tucson sub-station, Davis Dam Proj., approx. 1 mi. northwest of Tucson, Davis Dam Proj. Spec. 2029. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

California—Inter-Valley Electric Co-operative, Inyokern, 175 mi. rural distr. lines and substation Kern Co. **$540,000.**

Conn., Hartford—City of Hartford Housing Auth., 846 Asylum Ave., electrical distr. sys., Rice Heights Housing Proj. Kane & Fairchild, 42 Pearl St., archts.

Conn., Mansfield—State, Raymond S. Thatcher, comptroller, 114—State Capitol, Hartford, brick, steel, concrete power plant addns., alterations, Mansfield State Hospital, Conn. Proj. B/A-X-47.

Illinois—U. S. Eng., U. S. Court House & Custom House, St. Louis 1, Mo., 13.8 kv power line and substation to serve Cahokia pump. station, East Side Levee and Sanitary Dist., Proj. Item (II-C(1), St. Clair Co., CIVENG 23-065-50-103.

Ind., Butlerville—State P. Wks. & Supply Div., W. R. Mybeck, dir., State House, Indianapolis, remodeling 1 story, brick, rein.-con. power house, tunnel piping, and equip. $150,000. Bevington, Taggart & Fowler, 730 Ind. Pythian Bldg., Indianapolis, mech. engrs., CD 9/9; 1 story, 146x200 ft. brick, concrete dairy barn, Muscatatack State Colony, $100,000, Moore & Barns, 830 Ind. Pythian Bldg., Indianapolis, archts.

Iowa—Iowa Public Service Co., 517-5 St., Sioux City, 33,000 volt rural distr. lines and sys. imprvs. Palo Alto, Pocahontas and Humbolt Counties. **$250,000.**

Kansas—Kaw Valley Electric Co-operative, Inc., 1512 Lane St., Topeka, 172 mi. rural distr. lines, and sys. imprvs., Shawnee Co., **$350,000.**

Kansas—Lane-Scott Electric Co-operative, Dighton, 410 mi. rural distr. lines, Lane Co. **$410,000.**

Missouri—Southwest Electric Co-operative, Bolivar, Part 1, 381.6 mi. rural distr. lines, Benton, Camden, Cedar, Dallas, Hickory and Polk Counties; Part II, 263.9 mi. rural distr. lines, and 25-67 mi. conversion lines in Polk, Dallas, Cedar, Webster and Greene Counties. **$700,000.**

South Carolina—Marion Electric Co-operative, Inc., Marion, 0.5 mi. rural distr. lines, 9.02 mi. conversion and one steel structure 22/7.2/12.5 kv. substation, Marion and Dillon Counties. Plans deposit $10. J. B. McCrary Eng. Corp., 1408-22 Marietta Street Bldg., Atlanta, Ga., engrs.

North Dakota—Cass County Electric Co-operative, Kindred, 212 mi. rural distr. lines, Barnes and Cass Counties. $225,-500,000. Ulteig Eng. Corp., 1114½ Front St., Fargo, engr.

North Dakota—McLean Electric Co-operative, Garrison, 328 mi. rural distr. lines, McLean Co. $350,000. Ulteig Eng. Corp., 1114½ Front St., Fargo, engr.

North Dakota—Bureau Reclamation, Dpt. Interior, Bismarck, approx. 119 mi. Garrison-Voltaire, Devels Lake-Lakota, and Jamestown-Valley City 115 kilovolt transmission lines, Transmission Div. Missouri River Basin Proj., Spec. 2032.

Oregon—T. S. Eng., Pittock Block, Portland, power transformer bank inclosure, etc. at Bonneville Dam, CIVENG 35-076-50-376.

South Carolina—Horry Electric Co-operative, Inc., Conway, 80.5 mi. rural distr. lines, Harry Co. Plans deposit $10. Extended date. Southern Eng. Co., 1000 Crescent Ave. N.E., Atlanta, Ga., engr.

Texas—Transcontinental Gas Corp., Oil and Gas Bldg., Houston, Compressor station, El Campo Area, Washarton Co. **$450,000.** Fish Eng. Corp., M & M Bldg., Houston, engrs.

Washington — Clallam County Pub. Utility Dist., Forks, low timber, rock hydro-electric dam on Hoh River, **$588,000;** 15 mi. transmission line from dam to Forks sub-station, **$60,000.**

Wyoming — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., generator-voltage switchgear and protective equipment for Boysen Power Plant, Boysen Div., Boysen Unit, Missouri River Basin Proj., Spec. 2971.

Wyoming — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., control board, cabinet, distribution board, substation chargers, etc. for Boysen Power Plant, Missouri River Basin Proj., Boysen Div., Spec. 2833. L. N. McClellan, ch. engr.

Low Bidders & Contracts Awarded

Alabama—Dixie Electric Co-operative, Union Springs, 184.69 mi. rural distr. lines, Bullock Co., to Montgomery Electric Co., 121 S. Lewis St., Montgomery, **$156,-775.** Bids 5/9.

Md., Baltimore — Consolidated Gas, Electric Light & Power Co., Lexington Bldg., May 4, 6 story, brick, concrete warehouse office addn., alterations, Monument St., from Leimbach Constr. Corp., 3906 Hickory Ave., Timanus & Assoc., Inc., 2200 Maryland Ave., Baltimore, mech. engr. Frank N. Knear, 504 Woodland Terrace, Phila., Pa., structural engr.

Mississippi — Coahoma Electric Power Assoc., Clarksdale, 32.47 mi. rural distr. lines and sys. imprvs., Coahoma Co., to Hamilton & Rowell Constr. Co., P. O. Box 261, Laurel, **$72,301,** Bowman & Bowman, P. O. Box 518, Greenwood, engrs.

Missouri—Citizens Electric Corp., Ste. Genevieve, 491.27 mi. rural distr. lines, Ste. Genevieve Co., to L. C. Grayton & Co., Dyersburg, Pa., labor **$233,254,** materials **$491,000,** total **$724,254.** Bids 3/30.

South Dakota—F F M Electric Assn., Ipswich, May 9, 412.2 mi. rural distr. lines, Edmunds Co., from Ferguson & Diehl, Jefferson, Ia., **$342,080,** 207.8 mi. rural distr. lines, Edmunds Co. from Franzen Constr. Co., Ironton, Minn., **$185,417.**

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Fla., Tampa—State Bd., Tuberculosis Control 285 E. Monroe St., Jacksonville, Zone 2, plans by Reynolds, Smith & Hills, 227 Park St., Jacksonville, 500-bed steel, concrete hospital at Drew Field, near here, **$4,000,000.**

Ind., Indianapolis—Marvin L. Warner, c/o Warner Canter Co., Comer Bldg., Birmingham, Ala., plans by Russ & Harrison, 1001 Architects & Builders Bldg., Indianapolis, 14 story, bsmnt., 390 unit, stone, brick, hollow tile, rein.-con., structural steel, air conditioned apartment. **$3,500,000.**

Wis., Madison—University of Wisconsin, memorial library **$5,000,000.** Plans deposit $50. Phillips & Eble, 427 W. National Ave., Milwaukee, Zone 4, archts R. C. Kirchhoff, Madison, state archt.

Low Bidders & Contracts Awarded

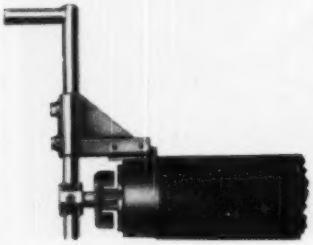
Mich., Birmingham—Bd. Educ., Birmingham, general contract Birmingham High School, to Cunningham-Limp Co., 3087 W. Grand Blvd., Detroit, **$1,496,368;** plumbing and heating, to Thornton Co., Inc., 420 S. Woodward St., **$433,377,** Swanson Assoc., Bloomfield Hills, archts.

take it easy!

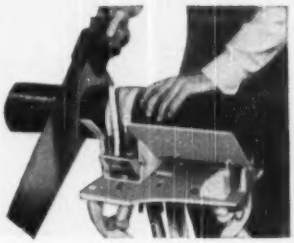
Here's some L-M equipment that makes Fibre Conduit so easy to use!

C

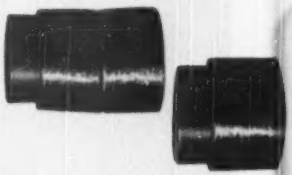
L-M Fibre Conduit Spacers: the easy way to get fast, accurate spacing. Asphalt and asbestos fibre, highly resistant to acids and alkalis, fire-resistant and Underwriters' Listed. Withstands vertical flat crushing test of over 1200 lbs. All sizes in stock, convenient cartons. (*A*) *Intermediate Spacer;* grooved ends lock together; centers notched for sawing. (*B*) *Base Spacer* assures rigid foundation, desired gradient. (*C*) *New Bend Spacer Bar,* a duct installation leveller, used horizontally or vertically for accurate alignment around bends; 20" long, 1¼" square.



New L-M Taper-Tool: cuts a precise 2° taper to assure tight, snug joints. Light, easy to use; salvages cut ends and short lengths, and saves you money.



New L-M Fibre Conduit Vise: holds all sizes of conduit firmly for sawing or tapering. For mounting on truck or bench, or with detachable tripod for field use.



L-M Multi-Bend Sections: male and female tapers offset 2½" giving 5° bend. Use them in any combination to make all kinds of special bends, crossovers. Smooth inside, water-tight joints.

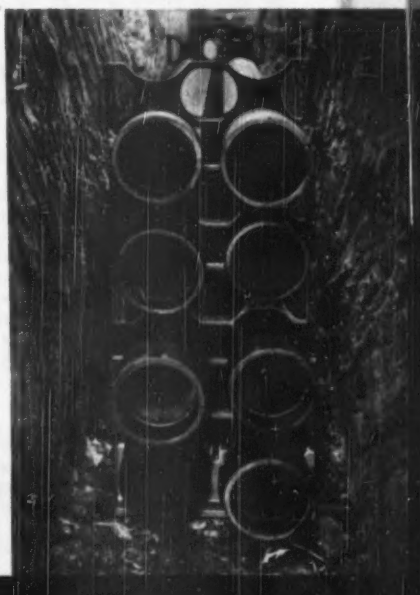
L-M Fibre Conduit is so easy to use...

They say laziness is responsible for a lot of progress. Well, if so, some lazy fellow in L-M must have figured out the L-M system for using Fibre Conduit, because it makes conduit so easy to use.

The system consists of some handy equipment, and some simple tricks for using it, so that you come out with a good, solid, accurately aligned installation. Of course it does take *some* elbow grease, but not nearly so much as without L-M's easy-to-use gimmicks.

We offer a complete line of conduit, couplings, adapters, and bends to make any standard installation. All have a smooth inside finish to make cable pulling easy without abrasion.

Why don't you get the low-down? Ask the L-M Field Engineer for information and a copy of L-M's Fibre Conduit bulletin. Or write Line Material Company, Milwaukee 1, Wis. (a McGraw Electric Company Division).



LINE MATERIAL Fibre Conduit

Complete Coordinated Equipment for Distribution Today

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Rolling Again in 36 Hours

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A vital press of the *Detroit News* went out of commission when a 5 hp inching motor, overspeeded at 20,000 rpm, flew apart. Stecker Electric, an A-C Certified Service Shop, was called. Broken end bells had to be welded and machined to fit. The stator was rewound. Rotor windings were replaced. After completely testing the motor, it was back in service in just 36 hours!

IN DETROIT, and over 75 other cities covering all major industrial areas, you will find Allis-Chalmers Certified Service Shops. Make them your source for fast, reliable electrical repair service!

Independently owned and operated, these shops have been selected for their experience, highly skilled workmen, complete servicing facilities, and sound business reputation.

To save time, trouble and money on emergency or routine maintenance service call on your nearest Allis-Chalmers Certified Service Shop.

GOOD SOURCE FOR NEW MOTORS, TOO

Remember — your local Allis-Chalmers Certified Service Shop or Authorized Dealer offers the same fast, dependable delivery on new motors—plus matching control from one to 200 hp. For service or new equipment, count on Allis-Chalmers.

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Sold . . .
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by Allis-Chalmers Authorized Dealers, Certified Service Shops and Sales Offices throughout the country.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

TEXROPE — Belts in all sizes and sections, standard and Vari-Pitch sheaves, speed changers.

PUMPS — Integral motor and coupled types from ¾ in. to 72 in. discharge and up.

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

A-C

ALLIS-CHALMERS

C-E REHEAT BOILERS

O. H. HUTCHINGS STATION

THE DAYTON POWER AND LIGHT COMPANY

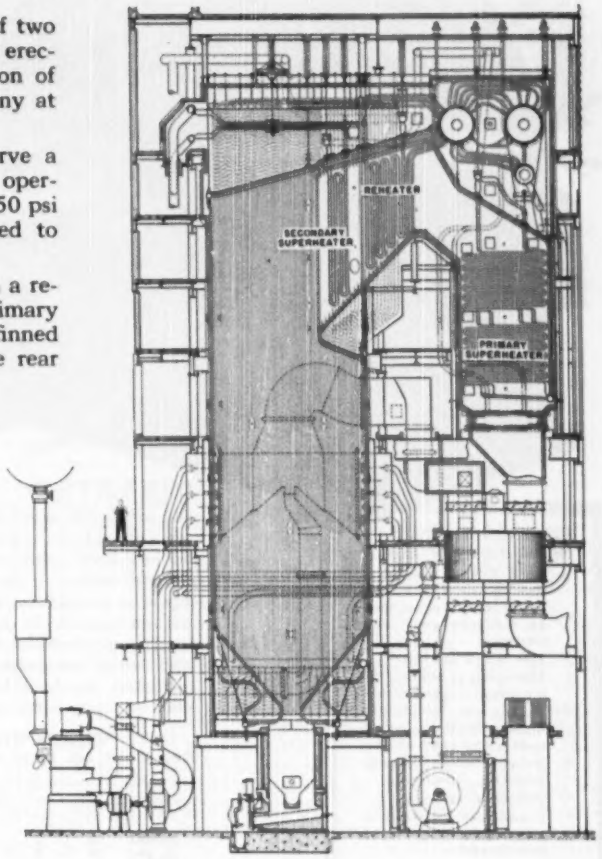
THE C-E Unit illustrated here, one of two duplicate units, is now in process of erection at the O. H. Hutchings Station of The Dayton Power and Light Company at Dayton, Ohio.

It is a reheat unit designed to serve a 60,000/66,000-kw turbine-generator operating at an initial steam pressure of 1450 psi at a temperature of 1000 F reheated to 1000 F.

The unit is of the radiant type with a reheater section located between the primary and secondary superheater surface. A finned tube economizer is located below the rear superheater section, and regenerative air heaters follow the economizer surface.

The furnace is fully water cooled, using closely spaced plain tubes except in the roof section, where finned tubes are employed. It is of the basket-bottom type, discharging to a sluicing hopper.

Pulverized coal firing is employed, using bowl mills and tilting tangential burners. B-406



C-E

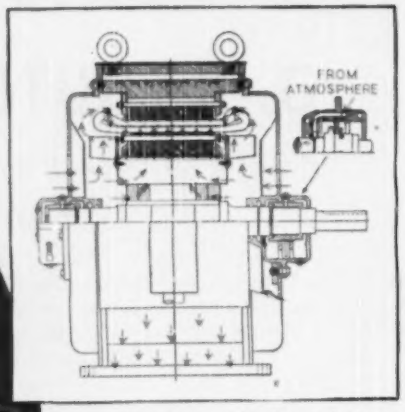
COMBUSTION ENGINEERING—SUPERHEATER, INC.

200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS

New, better ventilation

Things you'll like about this new motor



Inset in cross-section shows horizontal section through bearing and housing and illustrates sealing to prevent ventilating air from sucking oil or oil vapors out of bearing.

OTHER THINGS YOU'LL LIKE IN THIS NEW MOTOR

- 30% lighter weight in bearing bracket and 10% lighter in entire motor, than in old-type cast iron designs—
- Split sleeve bearings—
- Easy access to bearings for inspection or replacements—
- The toughness, rigidity, and streamlined design of welded steel construction—
- Dynamically balanced rotor minimizes vibration—
- Uniform air gap—
- Conduit box adjustable to take cable from any of four directions

DIRECTED AIR-FLOW DOES IT

You can do things in fabricating with steel that you can't easily do with cast iron. That's one of several reasons why the *ventilation* of the new Elliott Fabri-Steel motor hits a new high. The air flow is *directed*—coming in the large openings in both bearing brackets, driven by a radial fan *through* and *around* rotor, stator core, and coil end turns, to the outer shell or wrapper plate, then *down* and *out* through the inclined baffles. There is no recirculation—the air goes through once, picks up heat and takes it out. With its *directed* ventilation, the Fabri-Steel motor actually runs cooler than if it were operating in the open air without a cover.

Frame, wrapper plate and bearing brackets of this new standardized motor are all of crack-proof, tough, rigid, fabricated steel.

150 to 2000 hp—four to fourteen poles—drip-proof, splash-proof, outdoor splash-proof, enclosed separately (forced) ventilated, enclosed self (pipe or base) ventilated. Write to Dept. EN for 7000-2 bulletin.

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Plants in JEANNETTE, PA. • RIDGWAY, PA. • AMPERE, N. J. • SPRINGFIELD, O. NEWARK, N. J. • *DISTRICT OFFICES IN PRINCIPAL CITIES*

L-775b

Elliott FABRI-STEEL Motors

NEWS ABOUT PEOPLE

Commonwealth Edison Names LeClair, Others

Titus G. LeClair has been appointed chief electrical engineer of Commonwealth Edison Co. He succeeds George M. Armbrust, who has retired after 47 years' service.

LeClair's post as assistant chief electrical engineer will be taken over by William W. Wishard. John C. Woods succeeds Wishard as station design engineer.

LeClair has been with the Edison company since 1923. He left General Electric Co, where he was a testing engineer, to become a cable engineer for the utility. In 1945 he was named chief staff engineer and in 1948 assistant chief electrical engineer.

AIEE Presidential Nominee

The current nominee for president of the American Institute of Electrical Engineers, LeClair was a vice president of the organization from 1946 to 1948 and is a fellow and director. He was chairman of the Chicago section in 1929-30 and has been chairman of the committees on protective devices, registration of engineers, and professional group coordinating and of the professional activities subcommittee.

LeClair also is a past president of the Western Society of Engineers and the Illinois Engineering Council and past chairman of the Washington Award Commission. He is secretary of the Illinois Professional Engineers' Examining Committee.

Has Been Design Engineer

Wishard joined Commonwealth Edison as a draftsman in 1920 after a period of employment by San Joaquin Light & Power Co in Fresno, Calif. He has been station design engineer since 1943. Wishard is active in committee work for AIEE, the American Standards Association, and the Association of Edison Illuminating Companies.

Woods started with the Chicago utility as a draftsman in 1922. He became a design engineer in 1936 and was made supervising design engineer in 1940. In 1946 he was named section engineer in the station design division. During the war he was assigned for a year to the atomic energy plant at Oak Ridge, Tenn., where he designed the electric generating station. He also is a former chairman of the Chicago section of AIEE.

Armbrust joined Commonwealth Edison in 1902 as a draftsman. He had been a substation operator for the Chicago, Aurora, and Elgin Railway. In 1912 he was made chief draftsman, in 1919 staff engineer in the electrical engineer's office, and in 1943 chief electrical engineer.

Armbrust collaborated with the late Charles P. Steinmetz in the development of relaying for distribution line protection. Largely through his efforts Commonwealth Edison was the first electric utility to make practical use of the alternating current calculating board. He is a fellow and life member of AIEE and has been active in committee work for that organization and for the Western Society of Engineers and the Association of Edison Illuminating Companies.

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Walter T. Lucking, project manager of construction for Ohio Public Service Co, has joined Arizona Edison Co as assistant to the president. He will supervise the personnel, budget and rates, new business, safety, advertising, and publicity departments.

C. Porter Packard has been appointed sales manager of Elliott Co's Crocker-Wheeler division in Ampere, N. J. His 24 years of experience in electrical application engineering includes 17 years as a sales engineer for the New York industrial division of Westinghouse Electric Corp. He has been Boston district manager for Crocker-Wheeler.

JUDSON C. TRAVIS JOHN W. COLGAN HOWARD W. BOYNTON

Handy & Harman Elects 3 New Vice Presidents

Judson C. Travis has been elected executive vice president of Handy & Harman, Inc. At the same meeting of the board of directors Howard W. Boynton and John W. Colgan were named vice presidents and Richard G. Jones, who has been comptroller for the past five years, secretary.

Travis will be responsible for sales, manufacturing, refining, and research operations of the company and will have general charge of its five plants. He has been with Handy & Harman for 32 years, starting as an office boy. In 1938 he took charge of all sales activities and in 1943 was made vice president in charge of sales and a director.

The other new vice presidents also began as office boys. Colgan joined Handy & Harman 31 years ago and went into general sales work. In 1936, when the firm opened its Canadian plant, he went to Canada as manager. He returned to New York as sales manager in 1942 and was made a director in 1948. As vice president he will be in charge of sales.

Boynton will continue as treasurer. He has been with the company 47 years. In 1916 he was made assistant manager of the New York plant and in 1931 treasurer of the firm. He also has had charge of the credit and accounting departments and has been secretary since 1944.

Robert H. Leach, who has retired from active management, will continue as a vice president. He will act as consultant in matters concerning production, research, and metallurgy.

Nepsco Makes Surowiec Manager of Engineering

Edward J. Surowiec has been appointed manager of engineering for Nepsco Services, Inc, Augusta, Maine. He succeeds the late Frank H. Mason.

Surowiec joined the firm in 1936 and for six years was active in hydroelectric

EDWARD J. SUROWIEC

and steam plant design and construction for the New England Public Service group of utilities in Maine, New Hampshire, and Vermont. He also has been assistant construction engineer for Public Service Co of New Hampshire, Manchester.

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Westinghouse Appoints Russell International VP

Robert Russell, assistant general manager of Westinghouse Electric International Co since 1949, has been elected a vice president.

Russell joined the parent Westinghouse Electric Corp in 1933 at the appliance division plant at Mansfield, Ohio. In 1935 he joined the merchandise division of the international company and served in the distributor sales department until his transfer in 1941 to the special projects division.

He was named manager of special projects in 1946. Since that time he has been assistant sales manager and assistant general manager. Before joining Westinghouse Russell worked for several construction companies in Utah.

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Harold E. Cody has been appointed assistant general superintendent of lines of Cleveland Electric Illuminating Co. **Albert W. Reece** will succeed Cody as superintendent of the company's eastern district, with headquarters in Ashtabula, Ohio. Cody joined the company 24 years ago as a groundman in the lines department. He has held his present post in Ashtabula since July, 1943. Reece has been with CEI since 1945, first in Cleveland and later in the Ashtabula office as assistant superintendent.

W. J. Aicklen, vice president and division manager of the Galveston division of Houston Lighting & Power Co for the past 19 years, has been elected assistant general manager. Aicklen joined the utility in 1927 as general commercial superintendent. He was made a director 10 years ago. Before going to Houston Aicklen was president and general manager of Consumers Electric Light & Power Co in New Orleans.

Merle S. Lawrence, manager of Pennsylvania Power & Light Co's Susquehanna division at Sunbury since 1939, has been named secretary of the company. He succeeds **L. K. Bingaman,** who retired last year after more than 40 years of service. Lawrence, who entered the industry as a meter reader with Ohio Power Co in 1918, joined PP&L in 1928.

G. L. Phillippe has been named controller of General Electric Co's apparatus department, succeeding the late G. S. Hyatt. He joined the company in 1933 and worked in the accounting disbursements division at Schenectady and as a travelling auditor and as a statistician until he was made auditor for the apparatus department in 1947.

OBITUARY

Charles Edward Skinner

Charles Edward Skinner, 84, a retired Westinghouse Electric Corp executive and past president of the American Institute of Electrical Engineers, died in San Mateo, Calif., May 12.

Skinner joined Westinghouse in 1890 and spent 43 years with the firm. He was its first director of research and as an insulation specialist made several discoveries that led to the use of improved electrical testing apparatus. He demonstrated the insulating qualities of oil and related substances.

Skinner headed AIEE in 1931 and served as chairman of the American Engineering Standards Committee from 1925 to 1927. In 1920 he was chairman of the American delegation to the Brussels meeting of the International Electro-technical Commission, and in 1922 he held a similar position at the Geneva meeting. He also was a delegate to the World Engineering Congress in London in 1924 and to the World Power Conference in Japan five years later.

Ohio State University awarded Skinner the Lamme Gold Medal and an honorary doctor of engineering degree. He also received an honorary doctor of science degree from Ohio University.

V. R. Parrack, 48, electrical engineering supervisor for Florida Power Corp, died May 11 in Milwaukee, Wis., following a heart attack. Parrack had been with Florida Power since 1945, when he was named superintendent of distribution. Before joining that company he was system distribution engineer for Virginia Public Service Co. Earlier he worked for Westinghouse Electric Corp, West Penn Power Co, Carolina Power & Light Co, and Tennessee Public Service Co and with Tennessee Valley Authority as an assistant electrical engineer at Wilson Dam.

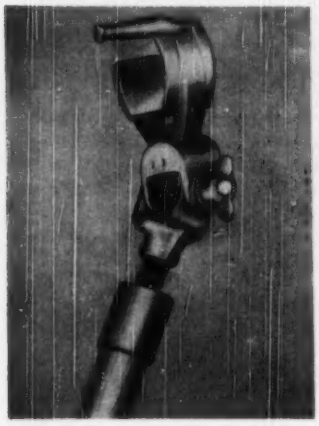
Charles S. Hammond, 59, assistant to the president of Georgia Power Co, died May 19 in Daytona Beach after a heart attack. Hammond joined the sales department of Georgia Power in 1915 and returned from military service and work with the U. S. Engineers in 1923 as assistant to the sales manager. He became assistant to the president in 1939.

S. Howard Rippey, 74, a retired consulting engineer who was associated with the late Dr Coleman Sellers in developing the Niagara Falls hydroelectric plants, died at his home in Philadelphia, May 18. A fellow of the American Institute of Electrical Engineers, Rippey had been Sellers' partner in an engineering firm bearing their names.

George R. Probst, 54, manager of steam turbine sales for Worthington Pump & Machinery Corp, died in Wellsville, N. Y., May 14. He joined Moore Steam Turbine Corp, later acquired by Worthington, in the shop assembly department in 1920 and served it in road work, testing, sales engineering, and as sales manager.

Willis Phelps Murphey, 74, Texas Power & Light Co's first commercial manager in Dallas, died in Brownwood, Texas, May 14. A veteran of 56 years in the utility field, Murphey was named commercial manager of the Dallas office in 1912. In 1913 he became Brownwood district manager for the company and held that position until 1947, when he retired.

NEW EQUIPMENT



Fuse Puller

AN ALL-ANGLE FUSE PULLER is meant for removing or inserting fuses and opening or closing disconnects and fuse clips. A disconnect prong at the top of the jaw is said to result in a double duty tool. The jaws are rubber-padded to protect fuses.

Jaws can be set within a 180-deg arc by tightening a wing nut. When the nut is not tightened, the puller is self aligning, changing its angle to conform to the position of the fuse.

The tool is heat-treated aluminum alloy, mounted on a spruce pole and tested to withstand 75 kv per ft. It is furnished in 6, 8, or 10-ft pole lengths.

A. B. Chance Co, Centralia, Mo.

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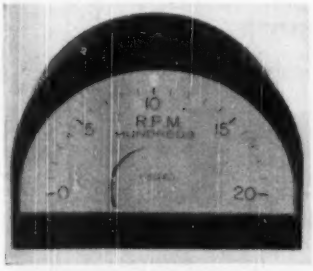

Long Scale Instruments

INSTRUMENTS of 28¼-in. scales with spot-of-light pointer permit readings from a considerable distance. They are said to be especially useful for persons who must attend to numerous operations at various points remote from the instrument.

Installed singly in dual or multiple groups, they can be used for speed and power indication, dynamometer readings, production testing, or reading generator output.

Instruments can be furnished with any type of movement or sensitivity normally obtainable as microammeters, milliammeters, ammeters, millivoltmeters, voltmeters in ac or dc, wattmeters, etc. They can be calibrated from 5% to 0.25% of full scale value.

Single instruments are 18¼ in. high and weigh about 35 lb; dual instruments (two in a single mounting) are 25¼ in. high, weighing 158½ lb.

Cole Instrument Co, 1320 S. Grand Ave, Los Angeles 15, Calif.

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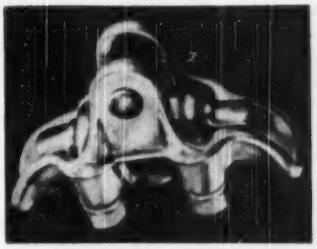

Aluminum Clamps

INCORPORATED in the design of a new line of aluminum suspension and strain clamps are aluminum keepers which are said to have but half the magnetic losses of aluminum clamps with ferrous keepers. No lining is needed with aluminum keepers. Greater coefficient of friction with aluminum conductors is also claimed.

This Wattsaver Clamp, as it is called, is designed for specific use on ACSR and all-aluminum conductors. Clamps are available for all conductor sizes, bare or armored, within the "5 to 15" rule.

Locke Inc, P.O. Box 57, Baltimore 3, Md.

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Portable Instruments

SINGLE AND MULTIPLE RANGE portable instrumeats, Type P-12, are rated in the 2% accuracy class. The line utilizes both moving iron and permanent magnet moving coil mechanisms.

Ammeters are available in full-scale ranges from 20 microamp to 50 amp dc, and from 5 milliamp to 50 amp ac. For dc voltages, the full scales range from 10 mv to 800 v, with ac ranges from 15 to 300 v. Rectifier milliammeters are available in full-scale ranges from 0.5 to 10 milliamp, and rectifier voltmeters from 2 to 800 v. All instruments are reported magnetically shielded.

Westinghouse Electric Corp, P. O. Box 2099, Pittsburgh 30, Pa.

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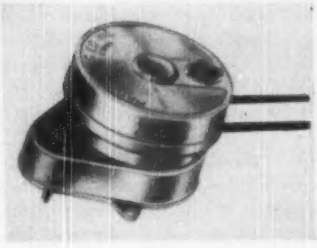


Timing Motor

DAY-NIGHT THERMOSTATS and daily program timers are applications for the Series 4400 timing motor. This extra slow speed motor is available in standard speeds of 6, 8, 12 hr, 1 day and 1 week per revolution. Non-standard speeds may be had in ranges of 5, 9, 10, 15, 16, 30, 32 and 36 hr, and 2, 4, 10, and 30 days per revolution.

Motors may be provided that are interchangeable in mounting and other dimensions with faster speed motors. Complete details are in Catalog 322.

Haydon Manufacturing Co, Inc, Torrington, Conn.

ELECTRICAL BUSINESS OUTLOOK

Expenditures for new plant and equipment are definitely on the rise. The latest McGraw-Hill survey of business plans shows that manufacturers will increase capital spending by 10% in the second half of 1950 over the first half. And some of the increases are in industries with the heaviest power consumption.

Steel companies, for example, are scheduled to invest 4% more in the next six months than in the first half-year. Petroleum refiners will make a similar increase. The chemical industry now plans to continue outlays at the first-half level, instead of cutting down as formerly planned. Paper companies plan more spending.

Outlays on new plants and equipment later this year will add to industrial power requirements in 1951. The increase won't be proportionate. Most of this new investment is for modernization of facilities rather than for expansion of capacity. But new equipment generally is more fully automatic, uses more power per unit of production. So the pickup in capital outlays will add to future demand on utilities.

The immediate effect of higher capital expenditures may be to keep steel output at a high rate in the summer months. This would remedy much of the usual summer slump in industrial power sales. One of the big reasons for the sag last year was the drop in steel production.

The autotmobile and construction industries will still be calling for lots of steel in coming months. Lately some steel evidently has been going into inventory. But rising capital expenditures mean heavier steel requirements for machinery makers. So it's hard to see steel production going down very much.

Increased activity in the capital goods industries generally is further assurance of continued strong industrial power sales. Not only will these companies take more power, but their heavy payrolls are an important factor in maintaining buying power and demand for consumer goods. And this, in turn, results in high production and power demand by consumer industries.

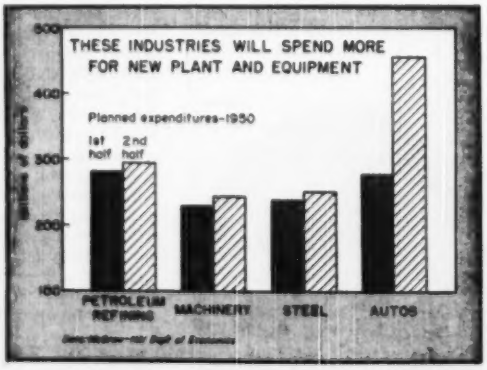
Not all sections of the country, however, will benefit equally from the new wave of spending on plant. It seems likely that the Mid-West will get most of the new investment. And the South may gain substantially too. But the Northeast and Pacific Coast sections are being largely by-passed.

The McGraw-Hill survey isn't broken down by regions. But you can find significant clues by looking at the industries which are stepping up investment most. They include automobiles, steel, machinery, and food products. These lines are heavily concentrated in the Central Industrial power region.

The textile industry also is increasing its investment outlays. But the new investment is chiefly in the South. New England is not gaining. Capital expenditures by makers of copper and brass products, another New England specialty, are still on the decline. And there's no increase in investment scheduled by the transport equipment industry, which is important on the West Coast.

There's another way to see where the construction pickup is probably coming: Note the regional figures on industrial construction contract awards. For the first four months of 1950, the Mid-West and South show spectacular increases over 1949. So do some other states west of the Mississippi. But the New England, Middle Atlantic, and West Coast sections have been running behind. This indicates that most of the companies which are increasing their construction budgets are in the Mid-West or South.

The electric utility and electrical machinery industries are among the few not planning to increase capital investment in the second half. For them, the upturn may come in 1951 as the increase in industrial power requirements is reflected in the need for generating capacity.



MANUFACTURING INDUSTRIES will invest more in new plants and equipment during the second half of 1950, according to a new survey by the McGraw-Hill Dept. of Economics. Expenditures planned by steel and petroleum companies are significant because these industries are heavy consumers of electric power. Step-ups by steel, machinery and auto-makers indicate substantial new construction in the Mid-West and little in other sections of the country

Cut Installation Costs ... Save 2/3 of Installation Time ... Improve Appearance

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THE NEW MOLONEY "packaged-unit"

CONSTANT CURRENT TRANSFORMER

Save time and money with the new Moloney "Packaged-Unit" Constant Current Transformers. Simply hang the "Packaged-Unit" on the pole . . . connect primary and secondary leads . . . connect the control line . . . *and that's all!* Comes complete with all protective and control equipment incorporated as a part of the transformer to permit unit installation. No separate installations of lightning arrestors, primary fuse cutouts, oil switches or protective relays.

Write today to Moloney Electric Co., St. Louis 20, Mo., for Bulletin SL-702 giving complete information.

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MEEC-4

MOLONEY
ELECTRIC COMPANY
FACTORIES AT ST. LOUIS 20, MO.
AND TORONTO, ONTARIO, CANADA

Pays Up to 90% Dividend Yearly on Rural Lines

CORRECTION OF 10% low voltage pays off . . . *IF you can get inexpensive regulation* Up to now this was only possible on urban lines. But the new Allis-Chalmers pole-type ⅝% step regulator priced at only $850 makes 10% correction pay off now on rural lines too.

Some operators don't fully realize the hidden loss from low voltage. Cutting voltage only 10% may cut power consumption and revenue 15% on incandescent lighting loads. In fact, during the war time power pinch, a few utilities spread their power by cutting voltage. Conversely, correction of low voltage increases kwh consumption and revenue.

Take a feeder with 10% low voltage carrying a typical rural load. Yearly revenue can be increased as much as $768 for every 200 customers by raising voltage 10%.

On many rural feeders voltage is 10% low today. There is no reason for continuing to take these revenue losses now that the new Allis-Chalmers 10.8 kva, 15 amp, 7200 v, pole-type regulator with its ±10% regulation is available.

Get the facts! Let Allis-Chalmers engineers help you analyze a study of your system. Call your nearby A-C Sales Office.

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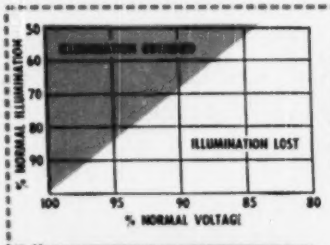
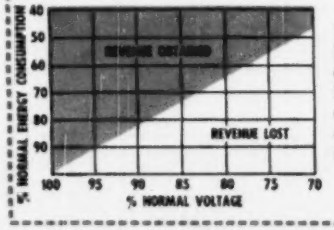


Correction of 10% low voltage increases revenue from lighting 19% — But up to now this was too expensive on rural feeders. New low cost regulator makes correction pay off.



10% low voltage cuts illumination 30% . . . 15¢ of every dollar for lighting is lost. In addition, cooking and heating water electrically take 22% longer.

ALLIS-CHALMERS

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